```
=> d que
L1        927748 SEA FILE=REGISTRY ABB=ON  PLU=ON  (P(L)N)/ELS
L2        823376 SEA FILE=REGISTRY ABB=ON  PLU=ON  L1 AND  (SI OR BI OR GE
                 OR SN OR SB OR O OR S OR SE OR TE OR PO)/ELS
L5        300963 SEA FILE=REGISTRY ABB=ON  PLU=ON  L1 AND X/ELS
L6           212 SEA FILE=REGISTRY ABB=ON  PLU=ON  L5 AND 3/ELC.SUB
L8            16 SEA FILE=REGISTRY ABB=ON  PLU=ON  (105-58-8/BI OR 1184-10-7
                 /BI OR 12190-79-3/BI OR 1313-13-9/BI OR 14283-07-9/BI OR
                 2397-48-0/BI OR 33027-68-8/BI OR 722454-84-4/BI OR
                 722454-86-6/BI OR 724792-59-0/BI OR 724792-60-3/BI OR
                 7439-93-2/BI OR 9002-88-4/BI OR 957-13-1/BI OR 96-48-0/BI
                 OR 96-49-1/BI)
L9             8 SEA FILE=REGISTRY ABB=ON  PLU=ON  L8 AND 1-100/P
L11       555245 SEA FILE=REGISTRY ABB=ON  PLU=ON  L2 AND 1/P
L12       231885 SEA FILE=REGISTRY ABB=ON  PLU=ON  L11 AND 1/N
L13         4230 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L6
L14          362 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L9
L15       228597 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L12
L16       232750 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L13 OR L14 OR L15)
L18         1836 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L16(L)FILM#
L20            1 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L18 AND (NONAQUEOUS OR
                 NON AQUEOUS)(2A)BATTER?
L21         6515 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L16 AND FILM?
L22            4 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L21 AND (NONAQUEOUS OR
                 NON AQUEOUS)(2A)BATTER?
L23            4 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L20 OR L22
L24          114 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L16 AND (NONAQUEOUS OR
                 NON AQUEOUS)(2A)BATTER?
L25           10 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L24 AND SEPARAT?
L26              QUE  ABB=ON  PLU=ON  FILM? OR THINFILM? OR LAYER? OR OVER
                 LAY? OR OVERLAID? OR LAMIN? OR LAMEL? OR (MULTILAYER?) OR
                  SHEET? OR LEAF? OR FOIL? OR COAT? OR TOPCOAT? OR OVERCOA
                 T? OR VENEER? OR SHEATH? OR COVER? OR ENVELOP? OR ENCAS?
                 OR ENWRAP? OR OVERSPREAD?
L27        31314 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L16 AND L26
L28           27 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L27 AND (NONAQUEOUS OR
                 NON AQUEOUS)(2A)BATTER?
L29           31 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L23 OR L25 OR L28
L55              STR
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NODE ATTRIBUTES:
NSPEC   IS RC     AT   1
NSPEC   IS RC     AT   2
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS   2

STEREO ATTRIBUTES: NONE
L57       218024 SEA FILE=REGISTRY SUB=L1 SSS FUL L55
L59        78767 SEA FILE=REGISTRY ABB=ON  PLU=ON  L57 AND X/ELS
L61       139257 SEA FILE=REGISTRY ABB=ON  PLU=ON  L57 NOT L59
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L62      126965 SEA FILE=REGISTRY ABB=ON  PLU=ON  L61 AND 1/NC
L63       49843 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L59
L64       72739 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L62
L65        5757 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L63 OR L64) AND L26
L66          12 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L65 AND  (NONAQUEOUS OR
                NON AQUEOUS)(2A)BATTER?
L67          74 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L63 OR L64) AND
                (NONAQUEOUS OR NON AQUEOUS)(2A)BATTER?
L68           3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L67 AND SEPARAT?
L71      105894 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L63 OR L64) OR L14
L72        5757 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L71 AND (SEPERAT? OR L26)

L73         101 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L72 AND BATTER?
L74          76 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L73 AND (1808-2003)/PRY,AY
                ,PY
L75          13 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L66 OR L68
L76          82 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L74 OR L75
L77          70 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L76 AND ELECTROCHEM?/SC,SX

L79           9 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L29 AND L71
L80          70 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L77 OR L79
L81          41 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L80 AND DEV/RL


=> d l81 1-41 ibib ed abs hitstr hitind

L81  ANSWER 1 OF 41  HCAPLUS  COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER:         2006:1122520  HCAPLUS  Full-text
DOCUMENT NUMBER:          145:457670
TITLE:                    Nonaqueous electrolyte solution with high safety,
                          evaluation of its safety, and batteries and
                          electric double-layer capacitors using
                          it
INVENTOR(S):              Eguchi, Shinichi
PATENT ASSIGNEE(S):       Bridgestone Corp., Japan
SOURCE:                   Jpn. Kokai Tokkyo Koho, 30pp.
                          CODEN: JKXXAF
DOCUMENT TYPE:            Patent
LANGUAGE:                 Japanese
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.           KIND   DATE        APPLICATION NO.         DATE
     ---------------      ----   --------    --------------------    --------
     JP 2006294334         A     20061026    JP 2005-110883          20050407
PRIORITY APPLN. INFO.:                       JP 2005-110883          20050407

OTHER SOURCE(S):          MARPAT 145:457670
ED   Entered STN:  27 Oct 2006
AB    The disclosed solution is characterized by having maximum heat generation rate
      ≤ 550 kW/m2 or total heat generation ≤10 MJ/m2 when measured by a cone
      calorimeter.  Preferably, the solution contains cyclic phosphazene compds.
      represented by (NPR12)n (R1 = halo, monovalent substituent; n = 3-4),
      fluorophosphates represented by O:PFR2 (R2 = halo, alkoxy, aryloxy; at least
      one of R2 is alkoxy or aryloxy), and supporting electrolytes, or the solution
      comprises solvents composed of only phosphate derivs. and supporting
      electrolytes.  Safety of the solution is evaluated by measuring its maximum
      heat generation rate or total heat generation by using a cone calorimeter.
      Secondary nonaq . electrolyte batteries and nonaq. electrolyte elec. double-
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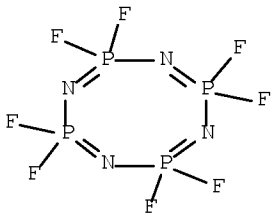
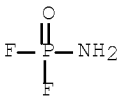
layer capacitors using the solution are also claimed. Explosion or ignition of the batteries and the capacitors are suppressed.

IT 14700-00-6 15391-51-2, Phosphoramidic difluoride
26471-90-9 33027-66-6 33027-68-8
55593-36-7 607744-75-2 882692-99-1
913182-28-2
(nonaq. electrolyte solution with low heat generation, preferably containing phosphazene and phosphate, for high safety for batteries and elec. double-layer capacitors)

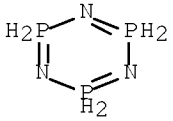
RN 14700-00-6 HCAPLUS
CN 2λ5,4λ5,6λ5,8λ5-1,3,5,7,2,4,6,8-Tetrazatetraphosphocine, 2,2,4,4,6,6,8,8-octafluoro- (CA INDEX NAME)



RN 15391-51-2 HCAPLUS
CN Phosphoramidic difluoride (8CI, 9CI) (CA INDEX NAME)



RN 26471-90-9 HCAPLUS
CN 1,3,5,2,4,6-Triazatriphosphorine, dichlorotetrafluoro-2,2,4,4,6,6-hexahydro- (CA INDEX NAME)

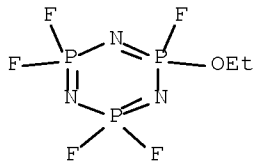


4 (D1—F)

2 (D1—Cl)

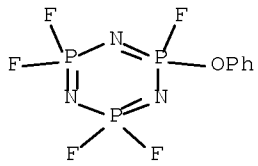
RN 33027-66-6 HCAPLUS
CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine,

2-ethoxy-2,4,4,6,6-pentafluoro- (CA INDEX NAME)



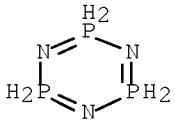
RN 33027-68-8 HCAPLUS

CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6-pentafluoro-6-phenoxy- (CA INDEX NAME)



RN 55593-36-7 HCAPLUS

CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine, tetrafluorodimethoxy- (CA INDEX NAME)

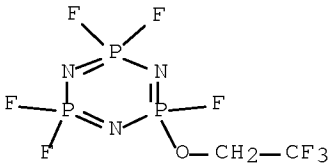


4 (D1—F)

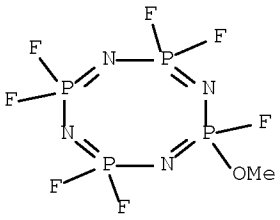
2 (D1—O—Me)

RN 607744-75-2 HCAPLUS

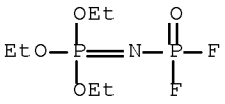
CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6-pentafluoro-6-(2,2,2-trifluoroethoxy)- (CA INDEX NAME)



RN 882692-99-1 HCAPLUS
CN 1,3,5,7,2,4,6,8-Tetrazatetraphosphocine, 2,2,4,4,6,6,8-heptafluoro-2,2,4,4,6,6,8,8-octahydro-8-methoxy- (9CI) (CA INDEX NAME)



RN 913182-28-2 HCAPLUS
CN Phosphorimidic acid, (difluorophosphinyl)-, triethyl ester (9CI) (CA INDEX NAME)



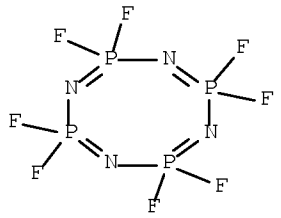
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 76
ST nonaq electrolyte soln safety phosphazene phosphate; safety evaluation nonaq electrolyte soln heat generation cone calorimeter; battery elec double layer capacitor nonaq electrolyte soln
IT Capacitors
(double layer; nonaq. electrolyte solution with low heat generation, preferably containing phosphazene and phosphate, for high safety for batteries and elec. double-layer capacitors)
IT Secondary batteries
(nonaq. electrolyte solution with low heat generation, preferably containing phosphazene and phosphate, for high safety for batteries and elec. double-layer capacitors)
IT Electrolytic solutions
(nonaq.; nonaq. electrolyte solution with low heat generation, preferably containing phosphazene and phosphate, for high safety for batteries and elec. double-layer capacitors)
IT 78-40-0, Triethyl phosphate 358-74-7, Diethyl fluorophosphate 460-52-6, Ethyl difluorophosphate 512-56-1, Trimethyl phosphate

1126-52-9 5954-50-7, Dimethyl fluorophosphate 14700-00-6
15391-51-2, Phosphoramidic difluoride 22382-13-4, Methyl
difluorophosphate 26078-16-0 26471-90-9 33027-66-6
33027-68-8 55593-36-7 607744-75-2
882692-99-1 913182-28-2
(nonaq. electrolyte solution with low heat generation, preferably containing phosphazene and phosphate, for high safety for batteries and elec. double-layer capacitors)

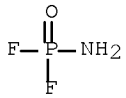
L81 ANSWER 2 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:1122518 HCAPLUS Full-text
DOCUMENT NUMBER: 145:457669
TITLE: Nonaqueous electrolyte solution with high safety, evaluation of its safety, and batteries and electric double-layer capacitors using it
INVENTOR(S): Eguchi, Shinichi
PATENT ASSIGNEE(S): Bridgestone Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 30pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006294332	A	20061026	JP 2005-110865	20050407
PRIORITY APPLN. INFO.:			JP 2005-110865	20050407

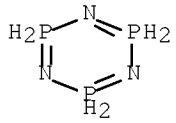
OTHER SOURCE(S): MARPAT 145:457669
ED Entered STN: 27 Oct 2006
AB The disclosed solution is characterized by having flame temperature ≤2700° when a flame at 700-800° is brought in contact with the solution Preferably, the solution contains cyclic phosphazene compds. represented by (NPR12)n (R1 = halo, monovalent substituent; n = 3-4), fluorophosphates represented by O:PFR2 (R2 = halo, alkoxy, aryloxy; at least one of R2 is alkoxy or aryloxy), and supporting electrolytes. Safety of the solution is evaluated by measuring its flame temperature by bringing a flame at 700-800° in contact with the solution Secondary nonaq. electrolyte batteries and nonaq. electrolyte elec. double-layer capacitors using the solution are also claimed. Explosion or ignition of the batteries and the capacitors are suppressed.
IT 14700-00-6 15391-51-2, Phosphoramidic difluoride
26471-90-9 33027-66-6 33027-68-8
55593-36-7 607744-75-2 882692-99-1
913182-28-2
(nonaq. electrolyte solution with low flame temperature containing phosphazene
and phosphate for high safety for batteries and elec. double-layer capacitors)
RN 14700-00-6 HCAPLUS
CN 2λ5,4λ5,6λ5,8λ5-1,3,5,7,2,4,6,8-Tetrazatetraphosphocine, 2,2,4,4,6,6,8,8-octafluoro- (CA INDEX NAME)



RN 15391-51-2 HCAPLUS
CN Phosphoramidic difluoride (8CI, 9CI) (CA INDEX NAME)



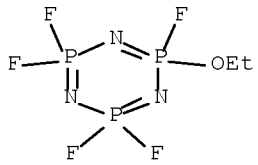
RN 26471-90-9 HCAPLUS
CN 1,3,5,2,4,6-Triazatriphosphorine, dichlorotetrafluoro-2,2,4,4,6,6-hexahydro- (CA INDEX NAME)



4 (D1—F)

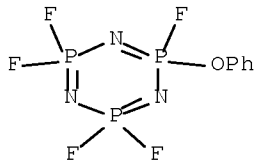
2 (D1—Cl)

RN 33027-66-6 HCAPLUS
CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine, 2-ethoxy-2,4,4,6,6-pentafluoro- (CA INDEX NAME)



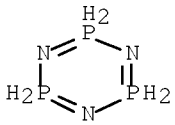
RN 33027-68-8 HCAPLUS

CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6-pentafluoro-6-phenoxy- (CA INDEX NAME)



RN 55593-36-7 HCAPLUS

CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine, tetrafluorodimethoxy- (CA INDEX NAME)

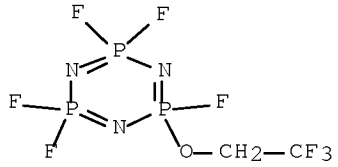


4 (D1—F)

2 (D1—O—Me)

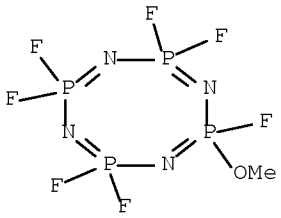
RN 607744-75-2 HCAPLUS

CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6-pentafluoro-6-(2,2,2-trifluoroethoxy)- (CA INDEX NAME)

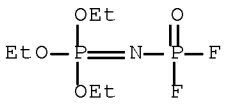


RN 882692-99-1 HCAPLUS

CN 1,3,5,7,2,4,6,8-Tetrazatetraphosphocine, 2,2,4,4,6,6,8-heptafluoro-2,2,4,4,6,6,8,8-octahydro-8-methoxy- (9CI) (CA INDEX NAME)



RN 913182-28-2 HCAPLUS
CN Phosphorimidic acid, (difluorophosphinyl)-, triethyl ester (9CI) (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 76
ST nonaq electrolyte soln safety phosphazene phosphate; safety evaluation nonaq electrolyte soln flame temp; battery elec double layer capacitor nonaq electrolyte soln
IT Capacitors
(double layer; nonaq. electrolyte solution with low flame temperature containing phosphazene and phosphate for high safety for batteries and elec. double-layer capacitors)
IT Secondary batteries
(nonaq. electrolyte solution with low flame temperature containing phosphazene and phosphate for high safety for batteries and elec. double-layer capacitors)
IT Electrolytic solutions
(nonaq.; nonaq. electrolyte solution with low flame temperature containing phosphazene and phosphate for high safety for batteries and elec. double-layer capacitors)
IT 78-40-0, Triethyl phosphate 358-74-7, Diethyl fluorophosphate 460-52-6, Ethyl difluorophosphate 512-56-1, Trimethyl phosphate 1126-52-9 5954-50-7, Dimethyl fluorophosphate 14700-00-6 15391-51-2, Phosphoramidic difluoride 22382-13-4, Methyl difluorophosphate 26078-16-0 26471-90-9 33027-66-6 33027-68-8 55593-36-7 607744-75-2 882692-99-1 913182-28-2
(nonaq. electrolyte solution with low flame temperature containing phosphazene
and phosphate for high safety for batteries and elec. double-layer capacitors)

L81 ANSWER 3 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:977382 HCAPLUS Full-text
DOCUMENT NUMBER: 145:360086
TITLE: Nonaqueous electrolytes for lithium ion batteries
INVENTOR(S): Chen, Zonghai; Amine, Khalil

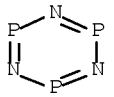
PATENT ASSIGNEE(S): The University of Chicago, USA
SOURCE: U.S. Pat. Appl. Publ., 20pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20060210883	A1	20060921	US 2006-373054	20060310
WO 2006101779	A2	20060928	WO 2006-US8664	20060310
WO 2006101779	A3	20070322		

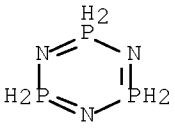
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.: US 2005-662056P P 20050315

OTHER SOURCE(S): MARPAT 145:360086
ED Entered STN: 21 Sep 2006
AB The present invention is generally related to electrolytes containing anion receptor additives to enhance the power capability of lithium-ion batteries. The anion receptor of the present invention is a Lewis acid that can help to dissolve LiF in the passivation films of lithium-ion batteries. Accordingly, one aspect the invention provides electrolytes comprising a lithium salt; a polar aprotic solvent; and an anion receptor additive; and wherein the electrolyte solution is substantially non-aqueous Further there are provided electrochem. devices employing the electrolyte and methods of making the electrolyte.
IT 291-37-2D, Cyclotriphosphazene, diaryloxy compound 908599-70-2 908599-71-3 908599-72-4 910041-64-4D, aryloxy compound 910041-65-5D, diaryloxy compound
(nonaq. electrolytes for lithium ion batteries)
RN 291-37-2 HCAPLUS
CN 1,3,5,2,4,6-Triazatriphosphorine (CA INDEX NAME)



RN 908599-70-2 HCAPLUS
CN 1,3,5,2,4,6-Triazatriphosphorine, diethenyltrifluoro-2,2,4,4,6,6-hexahydromethoxy- (9CI) (CA INDEX NAME)

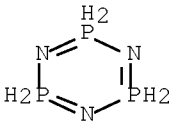


D1—O—Me

3 (D1—F)

2 [D1—CH═CH2]

RN 908599-71-3 HCAPLUS
CN 1,3,5,2,4,6-Triazatriphosphorine, triethenyldifluoro-2,2,4,4,6,6-hexahydromethoxy- (9CI) (CA INDEX NAME)

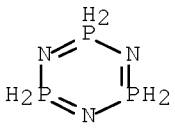


D1—O—Me

2 (D1—F)

3 [D1—CH═CH2]

RN 908599-72-4 HCAPLUS
CN 1,3,5,2,4,6-Triazatriphosphorine, ethenyltetrafluoro-2,2,4,4,6,6-hexahydromethoxy- (9CI) (CA INDEX NAME)

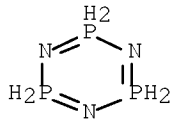


D1—O—Me

4 (D1—F)

D1—CH═CH2

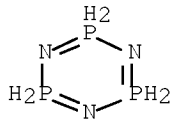
RN 910041-64-4 HCAPLUS
CN 1,3,5,2,4,6-Triazatriphosphorine, tetrafluoro-2,2,4,4,6,6-hexahydromethoxy- (9CI) (CA INDEX NAME)



4 (D1—F)

D1—O—Me

RN 910041-65-5 HCAPLUS
CN 1,3,5,2,4,6-Triazatriphosphorine, trifluoro-2,2,4,4,6,6-hexahydromethoxy- (9CI) (CA INDEX NAME)



3 (D1—F)

D1—O—Me

INCL 429326000; 429329000; 429200000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST lithium secondary battery nonaq electrolyte
IT Secondary batteries
(lithium; nonaq. electrolytes for lithium ion batteries)
IT Battery electrolytes
(nonaq. electrolytes for lithium ion batteries)
IT 78-19-3, 3,9-Divinyl-2,4,8,10-tetraoxaspiro[5,5]undecane 84-15-1, o-Terphenyl 84-15-1D, o-Terphenyl, aryloxy compound 86-74-8D, Carbazole, aryloxy compound 88-12-0, 1-Vinylpyrrolidin-2-one, uses 91-19-0, Quinoxaline 91-20-3, Naphthalene, uses 91-22-5, Quinoline, uses 91-22-5D, Quinoline, aryloxy compound 92-52-4, Biphenyl, uses 96-49-1D, Ethylene carbonate, diaryloxy compound 96-54-8, n-Methylpyrrole 101-84-8, Diphenyl ether 101-84-8D, Diphenyl ether, diaryloxy compound 102-09-0, Diphenyl carbonate 102-09-0D, Phenyl carbonate, aryloxy compound 102-09-0D, Phenyl carbonate, diaryloxy compound 102-71-6, Triethanolamine, uses

106-92-3, Allylglycidyl ether 106-99-0, Butadiene, uses 108-32-7D, Propylene carbonate, diaryloxy compound 109-93-3, Divinyl ether 109-97-7D, Pyrrole, aryloxy compound 109-99-9D, Thf, aryloxy compound 110-00-9D, Furan, diaryloxy compound 110-86-1, Pyridine, uses 110-89-4, Piperidine, uses 110-89-4D, Piperidine, aryloxy compound 111-34-2, Butyl vinyl ether 119-65-3, Isoquinoline 120-72-9, Indole, uses 120-92-3D, Cyclopentanone, aryloxy compound 140-67-0, 4-Allylanisole 142-96-1D, Butyl ether, aryloxy compound 176-53-4D, Ethylene silicate, aryloxy compound 176-53-4D, Ethylene silicate, diaryloxy compound 287-23-0D, Cyclobutane, aryloxy compound 288-32-4, Imidazole, uses 288-32-4D, Imidazole, aryloxy compound 289-80-5, Pyridazine 289-80-5D, Pyridazine, aryloxy compound 289-95-2, Pyrimidine 290-37-9, Pyrazine 290-37-9D, Pyrazine, aryloxy compound 291-37-2D, Cyclotriphosphazene, diaryloxy compound 503-30-0D, Oxetane, aryloxy compound 614-99-3D, Ethyl-2-furoate, aryloxy compound 856-46-2, Tris(4-fluorophenyl) borate 930-22-3 1072-53-3D, Ethylene sulfate, aryloxy compound 1072-53-3D, Ethylene sulfate, diaryloxy compound 1072-60-2, 2-Vinyltetrahydrofuran 1095-03-0, Triphenyl borate 1109-15-5, Tris(pentafluorophenyl)borane 1118-58-7 1337-81-1 1917-10-8, Vinyl-2-furoate 3741-38-6D, Ethylene sulfite, aryloxy compound 3741-38-6D, Ethylene sulfite, diaryloxy compound 3893-03-6, 4-Methoxy-o-terphenyl 4177-16-6, Vinyl pyrazine 4245-37-8, Vinyl methacrylate 4370-23-4, 1-Vinyl-piperidin-2-one 4427-96-7, Vinyl ethylene carbonate 5009-27-8D, Cyclopropanone, 2-aryl derivative 5009-27-8D, Cyclopropanone, 2-aryloxy derivative 5009-27-8D, Cyclopropanone, aryloxy compound 6622-92-0, 2,4-Dimethyl-6-hydroxy-pyrimidine 6919-80-8, Tris(1,1,1,3,3,3-hexafluoropropan-2-yl) borate 7570-02-7, Divinyl carbonate 7791-03-9 10411-26-4D, Butyl carbonate, diaryloxy compound 11099-06-2D, Ethyl silicate, diaryloxy compound 12789-45-6, MEthyl phosphate 12789-45-6D, Methyl phosphate, diaryloxy compound 13537-32-1D, Fluorophosphoric acid, alkyl derivative, lithium salt 14265-44-2D, Phosphate, aryloxy compound 14283-07-9, Lithium tetrafluoroborate 14861-06-4, Vinyl crotonate 15896-04-5 16410-02-9, 1-Vinylaziridin-2-one 18358-13-9D, Methacrylate, aryloxy compound 19024-82-9, Phosphoric acid, trivinyl ester 21324-40-3, Lithium hexafluorophosphate 21994-23-0 23462-75-1, Dihydropyran-3-one 23542-71-4 24213-83-0, Pyrazine, 2,5-divinyl 29383-23-1, Vinylimidazole 29935-35-1, Lithium hexafluoroarsenate 30676-86-9, Piperidine, vinyl 30851-79-7 31094-36-7, Quinoline, vinyl 32766-52-2, Tris(1,1,1,3,3,3-hexafluoro-2-(trifluoromethyl)propan-2-yl) borate 32893-16-6, Methyl vinyl carbonate 33454-82-9, Lithium triflate 33879-62-8, 2-Vinyloxetane 34721-16-9D, Furoate, 2-aryloxy compound 34721-16-9D, Furoate, 2-diaryloxy derivative 35143-18-1 36885-49-1, Vinyl phosphate 37203-76-2, Ethyl phosphate 38888-98-1, Diphenylethane 41824-21-9D, Crotonate, aryloxy compound 41824-21-9D, Crotonate, diaryloxy compound 44414-27-9 44866-76-4 50337-14-9, 3-Vinylcyclopentanone 51222-11-8 53627-36-4, β-Vinyl-γ-butyrolactone 55849-58-6 61548-40-1, Anisole, allyl 65967-52-4 66166-61-8, 3-Vinylcyclobutanone 66281-01-4 66281-16-1 66956-76-1 72607-84-2, 2,4-Divinyl-1,3-dioxane 75454-86-3 77208-21-0 90076-65-6 104531-81-9 117823-03-7 121712-01-4, 1-Vinylazetidin-2-one 125812-49-9 132404-42-3 132843-44-8 139669-84-4 146355-12-6, Tris(pentafluorophenyl)borate 210834-28-9, Tris(1,1,1,3,3,3-hexafluoro-2-phenylpropan-2-yl) borate 210834-35-8, Tris(2,4-difluorophenyl) borate 210834-37-0, Tris(2,3,5,6-tetrafluorophenyl) borate 210834-40-5, Tris(3-(trifluoromethyl)phenyl) borate 210834-42-7, Tris(3,5-bis(trifluoromethyl)phenyl) borate 244761-29-3, Lithium

bisoxalatoborate 247229-51-2 365458-32-8, 2-(2,4-Difluorophenyl)-4-fluoro-1,3,2-benzodioxaborole 365458-33-9 365458-34-0
365458-35-1 365458-36-2 365458-37-3 365458-38-4 365458-39-5
365458-40-8 402564-35-6, 2-(3-Trifluoromethylphenyl)-4-fluoro-1,3,2-benzodioxaborole 409071-16-5 557084-91-0 678966-16-0
856785-12-1 866947-06-0 891828-02-7 891828-03-8 891828-04-9
891828-05-0 891828-06-1 891831-48-4 897028-09-0 897028-10-3
897028-11-4 897028-12-5, 2-Amino-4-vinylcyclobutanone 897028-13-6
897028-14-7 897028-15-8 897028-16-9 897028-17-0 897028-18-1
897028-19-2 897028-20-5 897028-22-7 897028-23-8 897028-24-9
897028-25-0 897028-26-1 897028-27-2 897028-28-3 897028-28-3D, diaryloxy compound 897381-31-6 897381-32-7 897381-34-9
897381-36-1 897381-37-2 897381-38-3 897381-41-8 897381-42-9
897381-44-1 897381-45-2 897381-46-3 897381-47-4 908587-13-3
908587-22-4 908599-70-2 908599-71-3
908599-72-4 908599-74-6 910038-86-7 910038-87-8
910038-88-9 910041-64-4D, aryloxy compound
910041-65-5D, diaryloxy compound
(nonaq. electrolytes for lithium ion batteries)

L81 ANSWER 4 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:657261 HCAPLUS Full-text
DOCUMENT NUMBER: 145:127575
TITLE: Long life lithium batteries with stabilized electrodes
INVENTOR(S): Amine, Khalil; Liu, Jun; Vissers, Donald R.; Lu, Wenquan
PATENT ASSIGNEE(S): The University of Chicago, USA
SOURCE: U.S. Pat. Appl. Publ., 21 pp., Cont.-in-part of U.S. Ser. No. 857,365.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20060147809	A1	20060706	US 2006-338902	20060124
US 20050019670	A1	20050127	US 2004-857365 <--	20040528

PRIORITY APPLN. INFO.: US 2004-857365 A2 20040528
US 2005-647361P P 20050126
US 2003-488063P P 20030717 <--

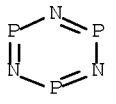
ED Entered STN: 07 Jul 2006
AB The present invention relates to non-aqueous electrolytes having electrode stabilizing additives, stabilized electrodes, and electrochem. devices containing the same. Thus the present invention provides electrolytes containing an alkali metal salt, a polar aprotic solvent, and an electrode stabilizing additive. In certain electrolytes, the alkali metal salt is a bis(chelato)borate and the additives include substituted or unsubstituted linear, branched or cyclic hydrocarbons comprising at least one oxygen atom and at least one aryl, alkenyl or alkynyl group. In other electrolytes, the additives include a substituted aryl compound or a substituted or unsubstituted heteroaryl compound wherein the additive comprises at least one oxygen atom. There are also provided methods of making the electrolytes and batteries employing the electrolytes. The invention also provides for

electrode materials. Cathodes of the present invention may be further stabilized by surface coating the particles of the spinel or olivine with a material that can neutralize acid or otherwise lessen or prevent leaching of the manganese or iron ions. In some embodiments the coating is polymeric and in other embodiments the coating is a metal oxide such as ZrO2, TiO2, ZnO, WO3, Al2O3, MgO, SiO2, SnO2 AlPO4, Al(OH)3, a mixture of any two or more thereof.

IT 291-37-2D, Cyclotriphosphazene, Vinyl containing derivs.
(long life lithium batteries with stabilized electrodes)

RN 291-37-2 HCAPLUS

CN 1,3,5,2,4,6-Triazatriphosphorine (CA INDEX NAME)



INCL 429326000; 429330000

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST lithium battery stabilized electrode

IT Hydrocarbons, uses
(cyclic; long life lithium batteries with stabilized electrodes)

IT Cyclic compounds
(hydrocarbons; long life lithium batteries with stabilized electrodes)

IT Secondary batteries
(lithium; long life lithium batteries with stabilized electrodes)

IT Battery electrodes
(long life lithium batteries with stabilized electrodes)

IT Coating materials
(surface; long life lithium batteries with stabilized electrodes)

IT 60-29-7, Diethyl ether, uses 79-20-9, Methyl acetate 96-48-0, γ-Butyrolactone 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 109-60-4, Propyl acetate 126-33-0, Sulfolane 141-78-6, Ethyl acetate, uses 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 7439-93-2D, Lithium, alkyl fliorophosphate 7791-03-9, Lithium perchlorate 12031-95-7, Lithium titanium oxide (Li4Ti5O12) 14283-07-9, Lithium tetrafluoroborate 15365-14-7, Iron lithium phosphate felipo4 21324-40-3, Lithium hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 61179-01-9, Aluminum lithium manganese oxide 90076-65-6 132404-42-3 132843-44-8 244761-29-3, Lithium bisoxalatoborate 346417-97-8, Cobalt lithium manganese nickel oxide (Co0.33LiMn0.33Ni0.33O2) 409071-16-5 678966-16-0
(long life lithium batteries with stabilized electrodes)

IT 84-15-1D, o-Terphenyl, aryloxy derivs. 86-74-8D, Carbazole, aryloxy derivs. 88-12-0, 1-Vinylpyrrolidin-2-one, uses 91-22-5D, Quinoline, aryloxy derivs. 101-84-8, Diphenyl ether 101-84-8D, Diphenyl ether, aryloxy derivs. 102-09-0, Diphenyl carbonate 102-09-0D, Phenyl carbonate, aryloxy derivs. 106-92-3, Allyl

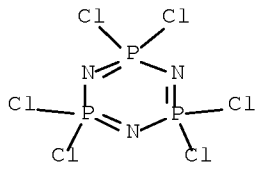
glycidyl ether 109-93-3, Divinyl ether 109-97-7D, Pyrrole, aryloxy derivs. 109-99-9D, Tetrahydrofuran, aryloxy derivs. 110-00-9D, Furan, aryloxy derivs. 110-89-4D, Piperidine, aryloxy derivs. 111-34-2, Butyl vinyl ether 120-92-3D, Cyclopentanone, aryloxy derivs. 140-67-0, 4-Allylanisole 142-96-1D, Butyl ether, aryloxy derivs. 176-53-4D, Ethylene silicate, aryloxy derivs. 288-32-4D, Imidazole, aryloxy derivs. 289-80-5D, Pyridazine, aryloxy derivs. 290-37-9D, Pyrazine, aryloxy derivs. 291-37-2D, Cyclotriphosphazene, Vinyl containing derivs. 291-37-2D, Cyclotriphosphazene, aryloxy derivs. 503-30-0D, Oxetane, aryloxy derivs. 614-99-3D, Ethyl-2-furoate, aryloxy derivs. 930-22-3 1072-53-3D, Ethylene sulfate, aryloxy derivs. 1917-10-8, Vinyl-2-furoate 3724-65-0D, Crotonic acid, aryloxy derivs. 3741-38-6D, Ethylene sulfite, aryloxy derivs. 4245-37-8, Vinyl methacrylate 4370-23-4, 1-Vinylpiperidin-2-one 4427-96-7, Vinyl ethylene carbonate 5009-27-8D, Cyclopropanone, aryloxy derivs. 6622-92-0, 2,4-Dimethyl-6-hydroxy-pyrimidine 7570-02-7, DiVinyl carbonate 12789-45-6, Methyl phosphate 14265-44-2D, Phosphate, aryloxy derivs. 14861-06-4, Vinyl crotonate 15896-04-5 16053-89-7D, 2-Furancarboxylate, aryloxy derivs. 16410-02-9 18358-13-9D, Methacrylate, aryloxy derivs. 21994-23-0 23462-75-1, Dihydropyran-3-one 32893-16-6 33879-62-8, 2-Vinyloxetane 36885-49-1, Vinyl phosphate 37203-76-2, Ethyl phosphate 37275-48-2D, Bipyridine, methoxy vinyl derivs. 44414-27-9 50337-14-9, 3-Vinylcyclopentanone 53627-36-4, β-Vinyl-γ-butyrolactone 57453-76-6 61548-40-1 66166-61-8, 3-Vinylcyclobutanone 66281-16-1 66956-76-1 72607-84-2 104531-81-9 117823-03-7 121712-01-4 139669-84-4 557084-91-0 856785-12-1 866947-06-0 897028-07-8 897028-08-9 897028-09-0 897028-10-3 897028-11-4 897028-12-5 897028-13-6 897028-14-7 897028-15-8 897028-16-9 897028-17-0 897028-18-1 897028-19-2 897028-20-5 897028-21-6 897028-22-7 897028-23-8 897028-24-9 897028-25-0 897028-26-1 897028-27-2 897028-28-3 897381-27-0 897381-28-1 897381-29-2 897381-30-5 897381-31-6 897381-32-7 897381-33-8 897381-34-9 897381-35-0 897381-36-1 897381-37-2 897381-38-3 897381-39-4 897381-40-7 897381-41-8 897381-42-9 897381-43-0 897381-44-1 897381-45-2 897381-46-3 897381-47-4
(long life lithium batteries with stabilized electrodes)

IT 1309-48-4, Magnesium oxide (MgO), uses 1314-13-2, Zinc oxide (ZnO), uses 1314-23-4, Zirconia, uses 1314-35-8, Tungsten trioxide, uses 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 7784-30-7, Aluminum phosphate alpo4 13463-67-7, Titania, uses 18282-10-5, Tin dioxide 21645-51-2, Aluminum hydroxide, uses
(long life lithium batteries with stabilized electrodes)

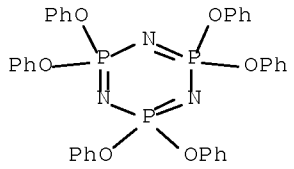
L81 ANSWER 5 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:511339 HCAPLUS Full-text
DOCUMENT NUMBER: 145:30866
TITLE: Nonflammable porous polyolefin films, separators therefrom, and nonaqueous electrolyte lithium batteries therewith
INVENTOR(S): Otsuki, Masashi
PATENT ASSIGNEE(S): Bridgestone Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006137789	A	20060601	JP 2004-326235	20041110
PRIORITY APPLN. INFO.:			JP 2004-326235	20041110

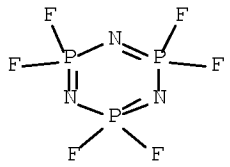
OTHER SOURCE(S): MARPAT 145:30866
ED Entered STN: 01 Jun 2006
AB The polyolefin films comprise ultrahigh-d. polyolefins with thickness 0.5-75 μm, porosity 30-85%, permeability shutdown temperature <135°, and Mw ≥7 + 105, low-d. polyolefins, and P-containing fireproofing agents (e.g., phosphazenes, phosphonates, or phosphinates). In the batteries (primary or secondary batteries) equipped with separators from the films, overcurrent is safely prevented by their shutdown function and nonflammability.
IT 940-71-6 1184-10-7 15599-91-4D, ethyleneglycoxy-containing
(fireproofing agents; nonflammable porous polyolefin films for nonaq. electrolyte lithium battery separators)
RN 940-71-6 HCAPLUS
CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexachloro- (CA INDEX NAME)



RN 1184-10-7 HCAPLUS
CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexaphenoxy- (CA INDEX NAME)



RN 15599-91-4 HCAPLUS
CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexafluoro-2,2,4,4,6,6-hexahydro- (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST battery separator safety nonflammable porous polyolefin; nonaq electrolyte lithium battery separator porous polyethylene film; phosphazene phosphonate phosphinate fireproofing agent battery separator
IT Primary batteries
(lithium; nonflammable porous polyolefin films for nonaq. electrolyte lithium battery separators)
IT Fireproofing agents
Primary battery separators
Safety
(nonflammable porous polyolefin films for nonaq. electrolyte lithium battery separators)
IT Polyolefins
(porous films; nonflammable porous polyolefin films for nonaq. electrolyte lithium battery separators)
IT 358-74-7, Diethyl fluorophosphate 460-52-6, Ethyl difluorophosphate 940-71-6 1184-10-7 15599-91-4D, ethyleneglycoxy-containing
(fireproofing agents; nonflammable porous polyolefin films for nonaq. electrolyte lithium battery separators)
IT 9002-88-4, Polyethylene
(porous films; nonflammable porous polyolefin films for nonaq. electrolyte lithium battery separators)

L81 ANSWER 6 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:469156 HCAPLUS Full-text
DOCUMENT NUMBER: 144:471444
TITLE: Fire-resistant fluoropolymer battery separators and nonaqueous -electrolyte batteries using them
INVENTOR(S): Otsuki, Masatomo; Kanno, Hiroshi
PATENT ASSIGNEE(S): Bridgestone Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006127839	A	20060518	JP 2004-312435	20041027

PRIORITY APPLN. INFO.: JP 2004-312435 20041027

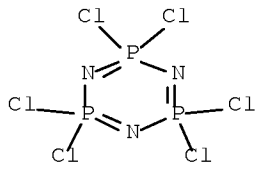
ED Entered STN: 19 May 2006

AB The separators comprise (A) polymers selected from poly(vinylidene fluoride) (I) and vinylidene fluoride copolymers and (B) P-containing fireproofing agents. Thus, a separator comprising I, hexachlorocyclotriphosphazene, and other additives showed limiting O index 28.4 volume%.

IT 940-71-6, Hexachlorocyclotriphosphazene 1184-10-7, Hexaphenoxycyclotriphosphazene
(fireproofing agent; fluoropolymer battery separators containing P-based fireproofing agents for nonaq.-electrolyte batteries)

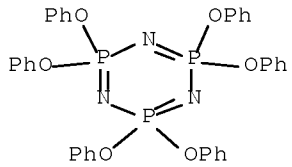
RN 940-71-6 HCAPLUS

CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexachloro- (CA INDEX NAME)



RN 1184-10-7 HCAPLUS

CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexaphenoxy- (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST fireproofing phosphazene fluoropolymer separator nonaq electrolyte battery; vinylidene fluoride polymer battery separator chlorocyclotriphosphazene fire resistance

IT Fireproofing agents
Primary batteries
Primary battery separators
(fluoropolymer battery separators containing P-based fireproofing agents for nonaq.-electrolyte batteries)

IT Fluoropolymers, uses
(fluoropolymer battery separators containing P-based fireproofing agents for nonaq.-electrolyte batteries)

IT 381-44-2 940-71-6, Hexachlorocyclotriphosphazene

1184-10-7, Hexaphenoxycyclotriphosphazene 426264-80-4
(fireproofing agent; fluoropolymer battery separators containing P-based fireproofing agents for nonaq.-electrolyte batteries)
IT 24937-79-9, Poly(vinylidene fluoride)
(fluoropolymer battery separators containing P-based fireproofing agents for nonaq.-electrolyte batteries)

L81 ANSWER 7 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:589783 HCAPLUS Full-text
DOCUMENT NUMBER: 141:126373
TITLE: Separator for nonaqueous electrolyte battery
INVENTOR(S): Kanno, Hiroshi; Otsuki, Masashi; Eguchi, Shinichi
PATENT ASSIGNEE(S): Bridgestone Corporation, Japan
SOURCE: PCT Int. Appl., 32 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

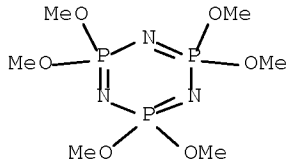
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004062002	A1	20040722	WO 2003-JP16360 <--	20031219
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003289453	A1	20040729	AU 2003-289453 <--	20031219
EP 1603175	A1	20051207	EP 2003-780936 <--	20031219
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
CN 1732580	A	20060208	CN 2003-80107738 <--	20031219
US 20060073381	A1	20060406	US 2005-540837 <--	20050627
PRIORITY APPLN. INFO.:			JP 2002-380683 A <--	20021227
			WO 2003-JP16360 W <--	20031219

ED Entered STN: 23 Jul 2004
AB The separator, which is incombustible even when the inside of a battery has a high temperature and useful for a primary or secondary Li battery, comprises a micro-porous film formed by adding a phosphazene derivative and/or an isomer of a phosphazene derivative to a polymer.
IT 957-13-1 1184-10-7 2397-48-0
33027-68-8 722454-84-4 722454-86-6

724792-59-0
(separators containing phosphazene derivative added polymers for primary and secondary lithium batteries)

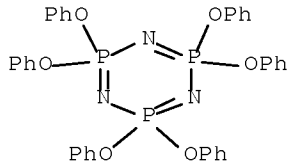
RN 957-13-1 HCAPLUS

CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine
1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexamethoxy- (CA INDEX NAME)



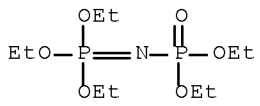
RN 1184-10-7 HCAPLUS

CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine,
2,2,4,4,6,6-hexaphenoxy- (CA INDEX NAME)



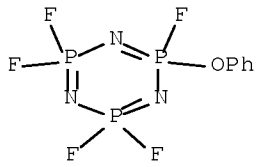
RN 2397-48-0 HCAPLUS

CN Phosphorimidic acid, (diethoxyphosphinyl)-, triethyl ester (9CI) (CA INDEX NAME)

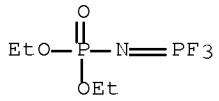


RN 33027-68-8 HCAPLUS

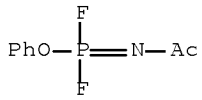
CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine,
2,2,4,4,6-pentafluoro-6-phenoxy- (CA INDEX NAME)



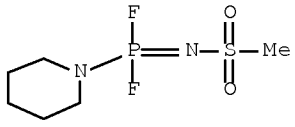
RN 722454-84-4 HCAPLUS
CN Phosphoramidic acid, (trifluorophosphoranylidene)-, diethyl ester (9CI) (CA INDEX NAME)



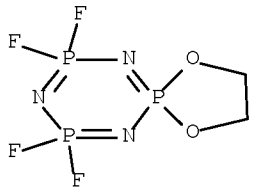
RN 722454-86-6 HCAPLUS
CN Phosphorodifluoridimidic acid, acetyl-, phenyl ester (9CI) (CA INDEX NAME)



RN 724792-59-0 HCAPLUS
CN Phosphonimidic difluoride, N-(methylsulfonyl)-P-1-piperidinyl- (9CI) (CA INDEX NAME)



IT 724792-60-3
(separators containing phosphazene derivative added polymers for primary and secondary nonaq. electrolyte batteries)
RN 724792-60-3 HCAPLUS
CN 5λ5,7λ5,9λ5-1,4-Dioxa-6,8,10-triaza-5,7,9-triphosphaspiro[4.5]decane, 7,7,9,9-tetrafluoro- (CA INDEX NAME)



IC ICM H01M002-16
ICS H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST nonaq electrolyte battery incombustible separator phosphazene deriv added polymer
IT Primary battery separators
Secondary battery separators
(separators containing phosphazene derivative added polymers for primary and secondary lithium batteries)
IT 7439-93-2, Lithium, uses
(anode; separators containing phosphazene derivative added polymers for primary and secondary lithium batteries)
IT 1313-13-9, Manganese dioxide, uses 12190-79-3, Cobalt lithium oxide (CoLiO2)
(cathode; separators containing phosphazene derivative added polymers for primary and secondary lithium batteries)
IT 96-48-0, γ-Butyrolactone 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 957-13-1 1184-10-7 2397-48-0 9002-88-4, Polyethylene 14283-07-9, Lithium tetrafluoroborate 33027-68-8 722454-84-4 722454-86-6 724792-59-0
(separators containing phosphazene derivative added polymers for primary and secondary lithium batteries)
IT 724792-60-3
(separators containing phosphazene derivative added polymers for primary and secondary nonaq. electrolyte batteries)

L81 ANSWER 8 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:100613 HCAPLUS Full-text
DOCUMENT NUMBER: 140:131168
TITLE: Apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochemical devices
INVENTOR(S): Benson, Martin H.; Neudecker, Bernd J.
PATENT ASSIGNEE(S): ITN Energym Systems, Inc., USA
SOURCE: U.S. Pat. Appl. Publ., 25 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20040023106	A1	20040205	US 2002-210180 <--	20020802

US 6770176 B2 20040803
US 20040219434 A1 20041104 US 2004-840497 20040506
<--
PRIORITY APPLN. INFO.: US 2002-210180 A3 20020802
<--

ED Entered STN: 08 Feb 2004
AB An apparatus for use as a fracture absorption layer, an apparatus for use as an electrochem. device, and methods of manufacturing the same are disclosed. The apparatus and methods of the present invention may be of particular use in the manufacture of thin-film, lightwt., flexible or conformable, electrochem. devices such as batteries, and arrays of such devices. The present invention may provide many advantages including stunting fractures in a first electrochem. layer from propagating in a second electrochem. layer.
IT 17739-47-8, Phosphorus nitride pn
(apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)
RN 17739-47-8 HCAPLUS
CN Phosphorous nitride (CA INDEX NAME)

IT 23369-45-1, Phosphorus nitride oxide pno
(sputter target; apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)
RN 23369-45-1 HCAPLUS
CN Phosphoric nitride (9CI) (CA INDEX NAME)

IC ICM H01M006-00
INCL 429122000; 429126000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 72
ST battery fabrication fracture absorption layer app; electrochem device fabrication fracture absorption layer app
IT Absorption
Electron beam evaporation
Fracture (materials)
Molecular beam epitaxy
Sputtering
(apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)
IT Fluoropolymers, uses
Polyesters, uses
Polyimides, uses
Polyoxyalkylenes, uses
(apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)
IT Vapor deposition process

(chemical; apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)

IT Sol-gel processing
(coating; apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)

IT Ion beams
(deposition; apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)

IT Electric apparatus
(electrochem.; apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)

IT Vapor deposition process
(electron-beam; apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)

IT Evaporation
(flash, thermal; apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)

IT Ceramics
Composites
(fracture absorption layer; apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)

IT Metals, uses
(fracture absorption layer; apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)

IT Vapor deposition process
(ion plating, plasma; apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)

IT Halogen compounds
Per compounds
(perbromates, sputter target; apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)

IT Halogen compounds
Per compounds
(periodates, sputter target; apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)

IT Vapor deposition process
(photochem.; apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)

IT Vapor deposition process
(phys.; apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)

IT Vapor deposition process
(plasma, arc, cathodic; apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)

IT Laser radiation
(pulsed, deposition; apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)

IT Coating process
(sol-gel; apparatus and method for fracture absorption layer

for use in fabrication of thin-film electrochem. devices)

IT Calcination
(spray; apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)

IT Bromides, processes
Chlorides, processes
Fluorides, processes
Iodides, processes
Perchlorates
Selenides
Sulfates, processes
Sulfides, processes
(sputter target; apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)

IT Semiconductor materials
(substrate; apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)

IT Alloys, uses
Polymers, uses
Shape memory alloys
(substrate; apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)

IT Evaporation
(thermal; apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)

IT Electrolytes
Primary batteries
(thin-film; apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)

IT Glass, uses
(thin-film; apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)

IT Lithium alloy, base
Tin alloy, base
(apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)

IT 554-13-2, Lithium carbonate 1303-28-2, Arsenic oxide (As2O5) 1303-86-2, Boron oxide (B2O3), uses 1304-56-9, Beryllium oxide beo, uses 1306-38-3, Ceria, uses 1310-53-8, Germanium oxide (GeO2), uses 1314-23-4, Zirconia, uses 1314-36-9, Yttria, uses 1314-56-3, Phosphorus pentoxide, uses 1327-53-3, Arsenic oxide (As2O3) 1344-28-1, Alumina, uses 7429-90-5, Aluminum, uses 7439-93-2, Lithium, uses 7440-20-2, Scandium, uses 7440-21-3, Silicon, uses 7440-31-5, Tin, uses 7440-38-2, Arsenic, uses 7440-41-7, Beryllium, uses 7440-42-8, Boron, uses 7440-45-1, Cerium, uses 7440-56-4, Germanium, uses 7440-65-5, Yttrium, uses 7440-67-7, Zirconium, uses 7447-41-8, Lithium chloride, uses 7550-35-8, Lithium bromide 7631-86-9, Silica, uses 7704-34-9, Sulfur, uses 7723-14-0, Phosphorus, uses 7723-14-0D, Phosphorus, compound 7789-24-4, Lithium fluoride, uses 7791-03-9, Lithium perchlorate 9002-84-0, Ptfe 9003-39-8, Polyvinylpyrrolidone 10043-11-5, Boron nitride (BN), uses 10377-48-7, LIthium sulfate 10377-51-2, Lithium iodide 10377-52-3, LIthium phosphate 11118-04-0, Lithium phosphorus nitride Li7PN4 11126-15-1, Lithium vanadium oxide 12003-67-7, Aluminum lithium oxide allio2 12005-14-0, Aluminum lithium oxide al5lio8 12025-11-5, Germanium lithium oxide geli4o4 12033-89-5, Silicon nitride, uses

12057-24-8, Lithia, uses 12060-08-1, Scandium oxide (Sc2O3) 12065-36-0, Germanium nitride ge3n4 12136-91-3, Phosphorus nitride p3n5 12169-03-8, Lithium yttrium oxide liyo2 12209-15-3, Lithium scandium oxide lisco2 12232-41-6, Beryllium lithium oxide Be2Li2O3 12355-58-7, Aluminum lithium oxide alli5o4 12384-10-0, Lithium zirconium oxide li8zro6 12408-97-8, Boron lithium nitride BLi3N2 12521-45-8, Lithium silicon nitride LiSi2N3 12521-55-0, Lithium silicon nitride Li2SiN2 12521-66-3, Lithium silicon nitride Li8SiN4 13453-69-5, Lithium borate libo2 13453-84-4, Lithium silicon oxide li4sio4 13478-14-3, Lithium arsenate 14024-11-4, Aluminum lithium chloride AlLiCl4 14283-07-9, Lithium tetrafluoroborate 15138-76-8, Lithium tetrafluoroaluminate 17739-47-8, Phosphorus nitride pn 19497-94-0, Aluminum lithium silicate allisio4 21324-40-3, Lithium hexafluorophosphate 24304-00-5, Aluminum nitride Aln 25322-68-3, Polyethylene oxide 25658-42-8, Zirconium nitride (ZrN) 25764-13-0, Yttrium nitride (YN) 26134-62-3, Lithium nitride li3n 30622-39-0, LIthium titanium phosphate LiTi2(PO4)3 39300-70-4, Lithium nickel oxide 39449-52-0, Lithium oxide silicate (Li8O2(SiO4)) 39457-42-6, Lithium manganese oxide 56320-64-0 57349-02-7, Cerium lithium oxide celio2 60883-88-7, Lithium phosphorus nitride LiPN2 61027-73-4, Aluminum lithium nitride AlLi3N2 62795-18-0 66581-07-5 66581-08-6 67181-65-1, Lithium silicon nitride Li5SiN3 76068-31-0 87796-15-4, Lithium scandium phosphate Li3Sc2(PO4)3 101993-97-9, Lithium phosphate silicate Li3.6(PO4)0.4(SiO4)0.6 111706-40-2, Cobalt lithium oxide CoLi0-1O2 113957-82-7, Lithium silicon nitride Li21Si3N11 113957-83-8, Lithium silicon nitride Li18Si3N10 143080-25-5, Phosphorus nitride oxide p4n6o 170171-06-9, Aluminum lithium fluoride AlLiF4 184905-46-2, Lithium nitrogen phosphorus oxide 651045-58-8, Lithium nitrogen phosphorus tin oxide

(apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)

IT 7440-37-1, Argon, uses 7727-37-9, Nitrogen, uses 7782-44-7, Oxygen, uses

(apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)

IT 7446-07-3, Tellurium oxide 7446-08-4, Selenium oxide seo2 7782-49-2, Selenium, processes 12031-80-0, Lithium oxide li2o2 12142-83-5, Tin nitride Sn3N4 12188-25-9, Lithium tin oxide li2sno3 12286-33-8, Tin phosphide Sn4P3 12344-15-9, Lithium tin oxide li8sno6 12372-55-3 12640-89-0, Selenium oxide 13451-18-8, Tellurium oxide teo3 13494-80-9, Tellurium, processes 13762-75-9, Lithium metaphosphate 13843-41-9, Lithium pyrophosphate 15578-26-4, Tin phosphate Sn2P2O7 15578-32-2, Tin phosphate Sn3(PO4)2 18282-10-5, Tin dioxide 23369-45-1, Phosphorus nitride oxide pno 25324-56-5, Tin phosphide SnP 37221-29-7, Sulfur nitride 37367-13-8, Tin phosphide SnP3 50645-72-2, Lithium tin phosphide Li5SnP3 50645-73-3, Lithium tin phosphide Li8SnP4 53680-59-4 102055-50-5, Lithium silicon nitride 116301-91-8, Phosphorous acid, trilithium salt 161286-52-8, Lithium sulfide thiosilicate (Li1.2S0.2(SiS3)0.4) 651045-60-2, Lithium phosphide (Li0-3P) 651045-62-4, Lithium nitride phosphide (Li10N10P) 651045-64-6, Lithium metaphosphate nitrate oxide (Li2.88(PO3)(NO3)0.14O0.31)

(sputter target; apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)

IT 7440-44-0, Carbon, uses

(substrate; apparatus and method for fracture absorption layer for use in fabrication of thin-film electrochem. devices)

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L81 ANSWER 9 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2003:118181 HCAPLUS Full-text
DOCUMENT NUMBER: 138:156304
TITLE: Battery structures, self-organizing structures, and related methods
INVENTOR(S): Chiang, Yet-Ming; Moorehead, William Douglas; Holman, Richard K.; Viola, Michael S.; Gozdz, Antoni S.; Loxley, Andrew; Riley, Gilbert N., Jr.
PATENT ASSIGNEE(S): Massachusetts Institute of Technology, USA; A123 Systems
SOURCE: PCT Int. Appl., 138 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 5
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003012908	A2	20030213	WO 2002-US23880 <--	20020726
WO 2003012908	A9	20040325		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 20030082446	A1	20030501	US 2001-21740 <--	20011022
CA 2455819	A1	20030213	CA 2002-2455819 <--	20020726
AU 2002330924	A1	20030217	AU 2002-330924 <--	20020726
EP 1433217	A2	20040630	EP 2002-768358 <--	20020726
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
JP 2005525674	T	20050825	JP 2003-517975 <--	20020726
CN 1864298	A	20061115	CN 2002-818181 <--	20020726
IN 2004KN00118	A	20060407	IN 2004-KN118 <--	20040130

PRIORITY APPLN. INFO.:			
	US 2001-308360P <--	P	20010727
	US 2001-21740 <--	A	20011022
	US 2000-242124P <--	P	20001020
	WO 2002-US23880 <--	W	20020726

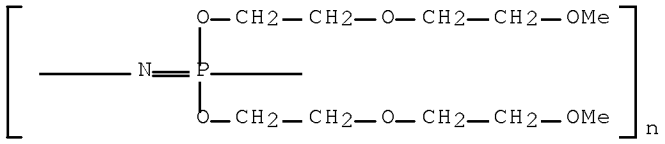
ED Entered STN: 14 Feb 2003

AB An energy storage device includes a first electrode comprising a first material and a second electrode comprising a second material, at least a portion of the first and second materials forming an interpenetrating network when dispersed in an electrolyte, the electrolyte, the first material and the second material are selected so that the first and second materials exert a repelling force on each other when combined. An electrochem. device, includes a first electrode in elec. communication with a first current collector; a second electrode in elec. communication with a second current collector; and an ionically conductive medium in ionic contact with the first and second electrodes, wherein at least a portion of the first and second electrodes form an interpenetrating network and wherein at least one of the first and second electrodes comprises an electrode structure providing two or more pathways to its current collector.

IT 98973-15-0, MEEP
(battery structures, self-organizing structures, and related methods)

RN 98973-15-0 HCAPLUS

CN Poly[nitrilo[bis[2-(2-methoxyethoxy)ethoxy]phosphoranylidyne]] (CA INDEX NAME)



IC ICM H01M010-04
ICS H01M010-40; H01M004-04; H01M004-02; H01B009-00; G02F001-00

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 72

ST battery structure self organizing structure

IT Phosphazenes
((methoxyethoxy)ethoxy; battery structures, self-organizing structures, and related methods)

IT Battery anodes
Battery cathodes
Conducting polymers
Embossing
Encapsulants
Ink-jet printing
Lithography
Polymer electrolytes
Primary batteries
Screen printing
(battery structures, self-organizing structures, and related methods)

IT Fluoropolymers, uses
Polyamines
Polyimides, uses
Polyoxyalkylenes, uses
(battery structures, self-organizing structures, and related methods)

IT Polyesters, uses
(battery structures, self-organizing structures, and

related methods)
IT Polyesters, uses
(battery structures, self-organizing structures, and related methods)
IT Glass, uses
(bismuth lithium borate; battery structures, self-organizing structures, and related methods)
IT Polymers, uses
(block, lithium salt-doped, electrolyte; battery structures, self-organizing structures, and related methods)
IT Electric apparatus
(electrochem.; battery structures, self-organizing structures, and related methods)
IT Polyoxyalkylenes, uses
(lithium complexes, perchlorate- or triflate-containing; battery structures, self-organizing structures, and related methods)
IT Secondary batteries
(lithium; battery structures, self-organizing structures, and related methods)
IT Composites
(nanocomposite; battery structures, self-organizing structures, and related methods)
IT Printing (nonimpact)
(stenciling; battery structures, self-organizing structures, and related methods)
IT Molding
(tape-casting; battery structures, self-organizing structures, and related methods)
IT Coating process
(web; battery structures, self-organizing structures, and related methods)
IT 7439-95-4, Magnesium, uses
(CoLiO2 doped with; battery structures, self-organizing structures, and related methods)
IT 7440-03-1, Niobium, uses 7440-25-7, Tantalum, uses 7440-32-6, Titanium, uses 7440-33-7, Tungsten, uses
(FeLiPO4 doped with; battery structures, self-organizing structures, and related methods)
IT 7429-90-5, Aluminum, uses
(LiMnO2 doped with; battery structures, self-organizing structures, and related methods)
IT 68-12-2, n,n-Dimethylformamide, uses 75-11-6, Diiodomethane 96-49-1, Ethylene carbonate 105-58-8, DiEthyl carbonate 108-32-7, Propylene carbonate 616-38-6, DimEthyl carbonate 627-31-6, 1,3-Diiodopropane 1307-96-6, Cobalt oxide coo, uses 1313-13-9, Manganese oxide mno2, uses 1313-99-1, Nickel oxide nio, uses 1314-23-4, Zirconium oxide, uses 1314-62-1, Vanadia, uses 1317-34-6, Manganese oxide mn2o3 1317-35-7, Manganese oxide mn3o4 1335-25-7, Lead oxide 1344-43-0, Manganese oxidemno, uses 1345-25-1, Iron oxide feo, uses 7226-23-5 7439-93-2, Lithium, uses 7439-93-2D, Lithium, intercalation compound 7440-21-3, Silicon, uses 7440-22-4, Silver, uses 7440-31-5, Tin, uses 7440-36-0, Antimony, uses 7440-42-8, Boron, uses 7440-44-0, Carbon, uses 7440-56-4, Germanium, uses 7440-66-6, Zinc, uses 7440-69-9, Bismuth, uses 7782-42-5, Graphite, uses 9002-84-0, Ptfe 9003-53-6, Polystyrene 10361-43-0, Bismuth hydroxide 12002-78-7 12031-65-1, Lithium nickel oxide linio2 12037-30-8, Vanadium oxide v6o11 12042-37-4, Alli 12048-27-0, Bili 12057-17-9, Lithium manganese oxide limn2o4 12057-22-6, Lizn 12057-30-6 12057-33-9 12063-07-9, Iron lithium

oxide fe2lio4 12162-79-7, Lithium manganese oxide limno2 12190-79-3, Cobalt lithium oxide colio2 12253-44-0 12338-02-2 12651-23-9, Titanium hydroxide 13463-67-7, Titanium oxide, uses 14475-63-9, Zirconium hydroxide 15365-14-7, Iron lithium phosphate felipo4 18282-10-5, Tin dioxide 21324-40-3, Lithium hexafluorophosphate 21651-19-4, Tin oxide sno 24937-79-9, Polyvinylidene fluoride 25014-41-9, Polyacrylonitrile 25322-68-3, Peo 25322-69-4, Polypropylene oxide 37217-08-6, Lithium titanium oxide liti2o4 39345-91-0, Lead hydroxide 50851-57-5 53262-48-9 53640-36-1 55575-96-7, Lithium silicide Li13Si4 55608-41-8 56627-44-2 61812-08-6, Lithium silicide Li21Si8 66403-10-9, Lithium boride (Li5B4) 67070-82-0 71012-86-7, Lithium boride (Li7B6) 74083-26-4 76036-33-4, Lithium silicide Li12Si7 98973-15-0, MEEP 106494-93-3, Lithium silicide Li21Si5 126213-51-2, Poly(3,4-ethylenedioxythiophene) 144419-56-7, Cobalt lithium magnesium oxide Co0.95LiMg0.05O2 496816-56-9 496816-57-0, Cobalt lithium magnesium oxide (Co0.95Li0.95Mg0.05O1.9) 496816-58-1, Iron lithium zirconium phosphate (Fe0.98LiZr0.02(PO4))
(battery structures, self-organizing structures, and related methods)

IT 76-05-1, Trifluoroacetic acid, uses 104-15-4, Toluene sulfonic acid, uses 7647-01-0, Hydrochloric acid, uses 57534-41-5, Zonyl FSN
(battery structures, self-organizing structures, and related methods)

IT 9002-88-4, Polyethylene 11099-11-9, Vanadium oxide 25038-59-9, Mylar, uses
(battery structures, self-organizing structures, and related methods)

IT 99742-70-8, Poly(o-methoxyaniline) 104934-51-2, Poly(3-octylthiophene)
(coating; battery structures, self-organizing structures, and related methods)

IT 7440-50-8, Copper, uses
(current collector; battery structures, self-organizing structures, and related methods)

IT 7791-03-9, Lithium perchlorate 33454-82-9, Lithium triflate
(electrolyte, cog. polyethylene oxide; battery structures, self-organizing structures, and related methods)

IT 1303-86-2, Boron oxide b2o3, uses 1304-76-3, Bismuth oxide bi2o3, uses 1314-56-3, Phosphorus pentoxide, uses 1317-36-8, Lead oxide pbo, uses 7447-41-8, Lithium chloride, uses 7631-86-9, Silica, uses 7789-24-4, Lithium fluoride, uses 10377-51-2, Lithium iodide 12057-24-8, Lithia, uses
(glass; battery structures, self-organizing structures, and related methods)

IT 7439-93-2D, Lithium, polyethylene oxide complexes 25322-68-3D, Peo, lithium complexes
(perchlorate- or triflate-containing; battery structures, self-organizing structures, and related methods)

L81 ANSWER 10 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2003:46155 HCAPLUS Full-text
DOCUMENT NUMBER: 138:340885
TITLE: Evaluation of Fluorinated Alkyl Phosphates as Flame Retardants in Electrolytes for Li-Ion Batteries: II. Performance in Cell
AUTHOR(S): Xu, Kang; Zhang, Shengshui; Allen, Jan L.; Jow, T. Richard
CORPORATE SOURCE: Electrochemistry Branch, U.S. Army Research Laboratory, Adelphi, MD, 20783-1197, USA

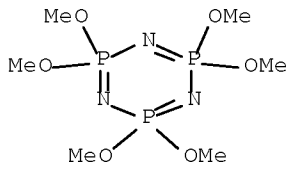
SOURCE: Journal of the Electrochemical Society (2003), 150(2), A170-A175
CODEN: JESOAN; ISSN: 0013-4651
PUBLISHER: Electrochemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 21 Jan 2003

AB Fluoroalkyl phosphates are synthesized and evaluated as flame retardants for electrolytes of Li-ion batteries. Nonflammable electrolytes based on these phosphates are formulated with the knowledge obtained in Part I of these papers (K. Xu et. al. (2003)) through ion conduction and electrochem. studies. The performance of these nonflammable electrolytes in lithium-ion cells is preliminarily evaluated by studying the effect of the degree of their concentration and fluorination on the cycling behavior, rate capability, and low temperature performances of the cells. The electrolytes based on phosphates, with at least two alkyls fluorinated, demonstrate stable cell performance at room temperature, and the presence of these phosphates not only delivers higher cell safety, but also improves the cell capacity retention over a long period of testing. However, the rate capability and low temperature performance of these nonflammable electrolytes decline with increasing concentration of these phosphates, as a result of higher cell impedance. Nevertheless, compared with their nonfluorinated counterparts, fluorination does introduce higher flame-retarding efficiency and lower performance impact. This alleviated trade-off between electrolyte flammability and cell performance made it possible to formulate nonflammable electrolytes, which contain 15-20% of fluoroalkyl phosphates and can work in a lithium-ion cell with min. sacrifice in performance.

IT 957-13-1
(HMPN, solns. with LiPF/carbonate blend electrolytes; evaluation of performance in electrochem. cells of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

RN 957-13-1 HCAPLUS

CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine
1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexamethoxy- (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 59, 76

ST fluorinated alkyl phosphate flame retardant electrolyte Li ion battery; electrochem cell impedance discharge capacity fluorinated alkyl phosphate effect

IT Flammability
(decreased; evaluation of performance in electrochem. cells of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT Ionic conductivity
(dependence on fluorinated content; evaluation of performance in

electrochem. cells of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT Battery electrolytes
Cyclic voltammetry
Electric impedance
Fireproofing agents
(evaluation of performance in electrochem. cells of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT Phosphates, uses
(fluoroalkyl ester derivs.; evaluation of performance in electrochem. cells of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT Secondary batteries
(lithium; evaluation of performance in electrochem. cells of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT Electric current-potential relationship
(of cells, capacity vs. potential; evaluation of performance in electrochem. cells of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT 287931-15-1
(BMP, solns. with LiPF/carbonate blend electrolytes; evaluation of performance in electrochem. cells of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT 957-13-1
(HMPN, solns. with LiPF/carbonate blend electrolytes; evaluation of performance in electrochem. cells of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT 94080-67-8
(TDP, solns. with LiPF/carbonate blend electrolytes; evaluation of performance in electrochem. cells of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT 358-63-4, Tris(2,2,2-trifluoroethyl) phosphate
(TFP, solns. with LiPF/carbonate blend electrolytes; evaluation of performance in electrochem. cells of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT 25085-53-4, Celgard 2500
(battery separator; evaluation of performance in electrochem. cells of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT 21324-40-3, Lithium hexafluorophosphate (LiPF6)
(complexes with EC/EMC and EC/EMC/PC mixts., electrolyte base; evaluation of performance in electrochem. cells of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT 1313-99-1, Nickel oxide, uses
(composite cathode, coated on aluminum; evaluation of performance in electrochem. cells of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT 7782-42-5, Graphite, uses
(composite, coated on copper, anode; evaluation of performance in electrochem. cells of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT 7440-50-8, Copper, uses
(graphite-coated anode; evaluation of performance in electrochem. cells of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT 623-53-0, Ethyl methyl carbonate
(mixture with EC and EC/PC blend, complexes with LiPF, electrolyte

base; evaluation of performance in electrochem. cells of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT 108-32-7, Propylene carbonate
(mixture with EC/EMC blend, complexes with LiPF, electrolyte base; evaluation of performance in electrochem. cells of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT 96-49-1, Ethylene carbonate
(mixture with EMC and EMC/PC blend, complexes with LiPF, electrolyte base; evaluation of performance in electrochem. cells of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT 7429-90-5, Aluminum, uses
(nickel oxide-coated cathode and spacer; evaluation of performance in electrochem. cells of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

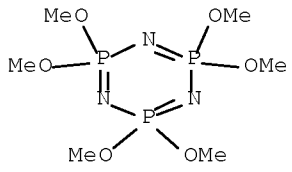
L81 ANSWER 11 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2003:46152 HCAPLUS Full-text
DOCUMENT NUMBER: 138:340884
TITLE: Evaluation of Fluorinated Alkyl Phosphates as Flame Retardants in Electrolytes for Li-Ion Batteries: I. Physical and Electrochemical Properties
AUTHOR(S): Xu, Kang; Ding, Michael S.; Zhang, Shengshui; Allen, Jan L.; Jow, T. Richard
CORPORATE SOURCE: Electrochemistry Branch, U.S. Army Research Laboratory, Adelphi, MD, 20783-1197, USA
SOURCE: Journal of the Electrochemical Society (2003), 150(2), A161-A169
CODEN: JESOAN; ISSN: 0013-4651
PUBLISHER: Electrochemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 21 Jan 2003

AB The reduction of electrolyte flammability by the known phosphorus-based flame retardants is always realized at the expense of cell performance, i.e., either electrochem. instability causing severe capacity fading or high viscosity of these cosolvents affecting both capacity use and power. To alleviate this trade-off between cell safety and performance, the authors synthesized fluorinated alkyl phosphates and studied their applicability as flame retarding cosolvents in electrolytes for Li-ion batteries. Summarized in this part of the work are the phys. properties of these fluorinated phosphates and their effect on the flammability and ion conductivity as well as electrochem. stability of the electrolyte solns. containing them. The addition of these phosphates to electrolyte solns. reduces the overall flammability at the expense of ion conduction, while electrochem. stability on carbonaceous anodes is improved as the result of the introduction of fluorine. By adjusting fluorine content in the phosphates, it is possible to find a cosolvent that makes the concept of nonflammable lithium ion electrolyte practical.

IT 957-13-1P
(solns. with LiPF6/carbonate blend electrolyte; evaluation of phys. and electrochem. properties of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

RN 957-13-1 HCAPLUS
CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine

1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexamethoxy- (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 45, 59, 76

ST fluorinated alkyl phosphate flame retardant electrolyte Li ion battery; carbonate lithium salt electrolyte decompn voltage cyclic voltammetry flammability

IT Open circuit potential
(decay due to electrolyte decomposition; evaluation of phys. and electrochem. properties of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT Decomposition
(electrochem., of electrolyte compds.; evaluation of phys. and electrochem. properties of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT Battery electrolytes
Cyclic voltammetry
Fireproofing agents
Flammability
Ionic conductivity
(evaluation of phys. and electrochem. properties of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT Phosphates, uses
(fluorinated alkyl- derivs.; evaluation of phys. and electrochem. properties of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT Secondary batteries
(lithium; evaluation of phys. and electrochem. properties of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT 287931-15-1P
(BMP, solns. with LiPF6/carbonate blend electrolyte; evaluation of phys. and electrochem. properties of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT 94080-67-8P
(TDP, solns. with LiPF6/carbonate blend electrolyte; evaluation of phys. and electrochem. properties of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT 358-63-4P, Tris(2,2,2-trifluoroethyl) phosphate
(TFP, solns. with LiPF6/carbonate blend electrolyte; evaluation of phys. and electrochem. properties of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT 21324-40-3, Lithium hexafluorophosphate (LiPF6)
(complexes with ethylene carbonate/ethylmethyl carbonate mixture, electrolyte base; evaluation of phys. and electrochem. properties

of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT 1313-99-1, Nickel oxide, uses
(composite cathode, coated on aluminum; evaluation of phys. and electrochem. properties of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT 7782-42-5, Graphite, uses
(composite, coated on copper, anode; evaluation of phys. and electrochem. properties of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT 7439-93-2, Lithium, uses
(counter and reference electrode; evaluation of phys. and electrochem. properties of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT 420-87-1, Sodium 2,2,2-trifluoroethoxide 125675-81-2 515145-16-1
(evaluation of phys. and electrochem. properties of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT 190333-65-4P, Hypochlorous acid trianhydride with phosphoric acid
(evaluation of phys. and electrochem. properties of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT 7440-50-8, Copper, uses
(graphite-coated anode; evaluation of phys. and electrochem. properties of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT 623-53-0, Ethylmethyl carbonate
(mixture with ethylene carbonate, complexes with LiPF6, electrolyte base; evaluation of phys. and electrochem. properties of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT 96-49-1, Ethylene carbonate
(mixture with ethylmethyl carbonate, complexes with LiPF6, electrolyte base; evaluation of phys. and electrochem. properties of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT 7429-90-5, Aluminum, uses
(nickel oxide-coated cathode; evaluation of phys. and electrochem. properties of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT 78-40-0, Triethyl phosphate 512-56-1, Trimethyl phosphate
(solns. with LiPF6/carbonate blend electrolyte; evaluation of phys. and electrochem. properties of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

IT 957-13-1P
(solns. with LiPF6/carbonate blend electrolyte; evaluation of phys. and electrochem. properties of fluorinated alkyl phosphates as flame retardants in electrolytes for Li-ion batteries)

REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L81 ANSWER 12 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:916927 HCAPLUS Full-text
DOCUMENT NUMBER: 138:356081
TITLE: The synthesis and applications of novel aryloxy/oligoethyleneoxy substituted polyphosphazenes as solid polymer electrolytes
AUTHOR(S): Allcock, Harry R.; Kellam, E. Clay, III
CORPORATE SOURCE: Department of Chemistry, The Pennsylvania State

University, University Park, PA, 16802, USA
SOURCE: Solid State Ionics (2003), 156(3,4), 401-414
CODEN: SSIOD3; ISSN: 0167-2738
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 03 Dec 2002

AB Polyphosphazenes with 2 different types of side group structures based on aryloxy- and oligoethyleneoxy units have been synthesized and examined as solid polymer electrolytes. The aryloxy groups improve the mech. properties, while the oligoethyleneoxy units facilitate Li ion transport. Two different polymer structures were studied: co-substituent phenoxy/oligoethyleneoxy polyphosphazenes with the general structure [NP(OPh)(OCH2CH2)x(OMe)2]n and single-substituent phosphazenes with aryloxy groups that have oligoethyleneoxy units in the para position of the aromatic rings, {NP[OC6H4(OCH2CH2)xOMe]2}n. Polymers of both types contain the same 50:50 molar ratio of aryloxy/oligoethyleneoxy groups, but their properties differ significantly. In general, the gum-like co-substituent polymers have lower glass transition temps. and higher ionic conductivities. The single-substituent polymers are tough materials that form excellent films, but have slightly lower ionic conductivities. Factors that affect the ionic conductivity, including glass transition temperature, etheric O concentration, and steric shielding of the phosphazene backbone are discussed.

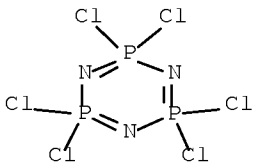
IT 25231-98-5DP, reaction products with sodium phenoxide and diethylene glycol Me ether 26085-02-9DP, Poly[nitrilo(dichlorophosphoranylidyne)], reaction products with sodium phenoxide and diethylene glycol Me ether
(synthesis and properties of novel aryloxy/oligoethyleneoxy-substituted polyphosphazenes as solid polymer electrolytes)

RN 25231-98-5 HCAPLUS

CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexachloro-, homopolymer (CA INDEX NAME)

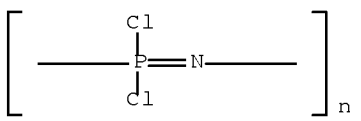
CM 1

CRN 940-71-6
CMF Cl6 N3 P3



RN 26085-02-9 HCAPLUS

CN Poly[nitrilo(dichlorophosphoranylidyne)] (CA INDEX NAME)



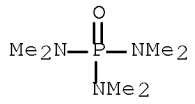
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 35, 36, 38, 76
IT Battery electrolytes
Ionic conductivity
Polymer electrolytes
(synthesis and properties of novel aryloxy/oligoethyleneoxy-substituted polyphosphazenes as solid polymer electrolytes)
IT 25231-98-5DP, reaction products with sodium phenoxide and diethylene glycol Me ether 25231-98-5DP, reaction products with sodium phenoxide and triethylene glycol Me ether 26085-02-9DP, Poly[nitrilo(dichlorophosphoranylidyne)], reaction products with sodium phenoxide and diethylene glycol Me ether 26085-02-9DP, Poly[nitrilo(dichlorophosphoranylidyne)], reaction products with sodium phenoxide and triethylene glycol Me ether 26085-02-9DP, Poly(dichlorophosphazene), reaction products with α-[(4-methylphenyl)sulfonyl]-ω-methoxypolyethylene glycol 58320-73-3DP, reaction products with polydichlorophosphazene
(synthesis and properties of novel aryloxy/oligoethyleneoxy-substituted polyphosphazenes as solid polymer electrolytes)
REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L81 ANSWER 13 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:695651 HCAPLUS Full-text
DOCUMENT NUMBER: 137:235227
TITLE: Electrically conductive adhesion promoters for electrodes
INVENTOR(S): Naarmann, Herbert; Kruger, Franz Josef
PATENT ASSIGNEE(S): Dilo Trading A.-G., Switz.
SOURCE: Ger. Offen., 4 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10115210	A1	20020912	DE 2001-10115210 <--	20010214
DE 10115210	B4	20070208		
PRIORITY APPLN. INFO.:			DE 2001-10115210 <--	20010214

ED Entered STN: 13 Sep 2002
AB These adhesive promoters are eminently suitable for application in Li ion batteries or Li-polymer batteries. Known adhesion promoters show serious disadvantages for the adhesion of active anodes of intercalation carbons and/or of active cathodes of intercalation transition metal oxides to Cu and/or Al current collectors. This special conducting polymer adhesion promotor ensures good adhesion of the current collector to an intercalation electrode and it also promotes the binding of the electrode materials to each other. The polymer is not affected by battery processes and it continues to perform well after many battery cycles.
IT 680-31-9, HMPT, uses

(elec. conductive adhesion promoters for electrodes)
RN 680-31-9 HCAPLUS
CN Phosphoric triamide, N,N,N',N',N'',N''-hexamethyl- (CA INDEX NAME)



IC ICM H01M004-62
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST adhesion promoter conducting polymer multilayer lithium battery electrode
IT Adhesion promoters
Battery electrodes
Conducting polymers
(elec. conductive adhesion promoters for electrodes)
IT Secondary batteries
(lithium; elec. conductive adhesion promoters for electrodes)
IT 60-29-7, Ether, uses 680-31-9, HMPT, uses 872-50-4, N-Methylpyrrolidone, uses 7791-03-9, Lithium perchlorate 9003-27-4 9003-31-0 9010-85-9 13453-75-3, Lithium fluoro sulfonate 14283-07-9 21324-40-3, Lithium hexafluorophosphate (LiPF6) 39300-70-4, Lithium Nickel oxide 39457-42-6, Lithium Manganese oxide 52627-24-4, Lithium Cobalt oxide
(elec. conductive adhesion promoters for electrodes)
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L81 ANSWER 14 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:695580 HCAPLUS Full-text
DOCUMENT NUMBER: 137:235225
TITLE: Electrically conductive adhesion promoters for electrodes
INVENTOR(S): Naarmann, Herbert; Kruger, Franz Josef
PATENT ASSIGNEE(S): Dilo Trading A.-G., Switz.
SOURCE: Ger. Offen., 4 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10107423	A1	20020912	DE 2001-10107423 <--	20010214
DE 10107423	B4	20070215		
PRIORITY APPLN. INFO.:			DE 2001-10107423 <--	20010214

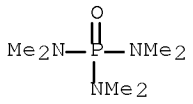
ED Entered STN: 13 Sep 2002
AB These adhesive promoters are eminently suitable for application in Li ion batteries or Li-polymer batteries. Known adhesion promoters show serious

disadvantages for the adhesion of active anodes of intercalation carbons and/or of active cathodes of intercalation transition metal oxides to Cu and/or Al current collectors. This special conducting polymer adhesion promotor ensures good adhesion of the current collector to an intercalation electrode and it also promotes the binding of the electrode materials to each other. Suitable polymers are polyisobutene as a homopolymer and/or the isoprene copolymer , butyl rubber. The molar masses of the polymers are preferably between 50000 and 300000. The polymer is not affected by battery processes and it continues to perform well after many battery cycles.

IT 680-31-9, HMPT, uses
(elec. conductive adhesion promoters for electrodes)

RN 680-31-9 HCAPLUS

CN Phosphoric triamide, N,N,N',N',N'',N''-hexamethyl- (CA INDEX NAME)



IC ICM H01M004-04
ICS H01M004-62

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

ST adhesion promoter conducting polymer multilayer lithium battery electrode

IT Adhesion promoters
Battery electrodes
Conducting polymers
(elec. conductive adhesion promoters for electrodes)

IT Secondary batteries
(lithium; elec. conductive adhesion promoters for electrodes)

IT 60-29-7, Ether, uses 680-31-9, HMPT, uses 872-50-4, N-Methylpyrrolidone, uses 7791-03-9, Lithium perchlorate 9003-27-4, Polyisobutene 9003-31-0, Polyisoprene 9010-85-9, Isobutene-isoprene copolymer 9010-85-9D, butyl rubber 13453-75-3, Lithium fluoro sulfonate 14283-07-9 21324-40-3 39300-70-4, Lithium Nickel oxide 39457-42-6, Lithium Manganese oxide 52627-24-4, Lithium Cobalt oxide
(elec. conductive adhesion promoters for electrodes)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L81 ANSWER 15 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:658414 HCAPLUS Full-text
DOCUMENT NUMBER: 137:188262
TITLE: Electrolytes with strong oxidizing additives for lithium/sulfur batteries
INVENTOR(S): Chu, May-Ying; Nimon, Yevgeniy S.; Visco, Steven J.
PATENT ASSIGNEE(S): Polyplus Battery Company, USA
SOURCE: PCT Int. Appl., 54 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002067344	A2	20020829	WO 2002-US4274 <--	20020213
WO 2002067344	A3	20050203		

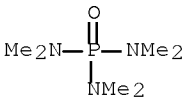
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

US 6632573	B1	20031014	US 2001-789379 <--	20010220
AU 2002306483	A1	20020904	AU 2002-306483 <--	20020213
US 20040081894	A1	20040429	US 2003-645193 <--	20030820

PRIORITY APPLN. INFO.:
US 2001-789379 A 20010220 <--
WO 2002-US4274 W 20020213 <--

OTHER SOURCE(S): MARPAT 137:188262
ED Entered STN: 30 Aug 2002
AB Disclosed are oxidizer-treated lithium electrodes, battery cells containing such oxidizer-treated lithium electrodes, battery cell electrolytes containing oxidizing additives, and methods of treating lithium electrodes with oxidizing agents and battery cells containing such oxidizer-treated lithium electrodes. Battery cells containing SO2 as an electrolyte additive in accordance with the present invention exhibit higher discharge capacities after cell storage over cells not containing SO2. Pre-treating the lithium electrode with SO2 gas prior to battery assembly prevented cell polarization. Moreover, the SO2 treatment does not neg. impact sulfur utilization and improves the lithium's electrochem. function as the neg. electrode in the battery cell.
IT 680-31-9, Hexamethylphosphoramide, uses
(electrolytes with strong oxidizing additives for lithium/sulfur batteries)
RN 680-31-9 HCAPLUS
CN Phosphoric triamide, N,N,N',N',N'',N''-hexamethyl- (CA INDEX NAME)



IC ICM H01M
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST lithium sulfur battery electrolyte oxidizing additive
IT Glass, uses

(Li coated with; electrolytes with strong oxidizing additives for lithium/sulfur batteries)

IT Battery electrolytes
Oxidizing agents
(electrolytes with strong oxidizing additives for lithium/sulfur batteries)

IT Halogens
(electrolytes with strong oxidizing additives for lithium/sulfur batteries)

IT Alkali metal sulfides
Polysulfides
Sulfides, uses
(electrolytes with strong oxidizing additives for lithium/sulfur batteries)

IT Halides
Halogen compounds
(halogen halides; electrolytes with strong oxidizing additives for lithium/sulfur batteries)

IT Polyethers, uses
(linear; electrolytes with strong oxidizing additives for lithium/sulfur batteries)

IT Secondary batteries
(lithium; electrolytes with strong oxidizing additives for lithium/sulfur batteries)

IT Chlorides, uses
(oxychlorides; electrolytes with strong oxidizing additives for lithium/sulfur batteries)

IT Alkaline earth chalcogenides
(sulfides; electrolytes with strong oxidizing additives for lithium/sulfur batteries)

IT Lithium alloy, base
(electrolytes with strong oxidizing additives for lithium/sulfur batteries)

IT 124-38-9, Carbon dioxide, uses 646-06-0, Dioxolane 865-44-1, Iodine chloride icl3 872-36-6, Vinylene carbonate 7446-09-5, Sulfur dioxide, uses 7553-56-2, Iodine, uses 7719-09-7, Thionyl chloride 7726-95-6, Bromine, uses 7782-50-5, Chlorine, uses 7789-33-5, Iodine bromide ibr 7790-99-0, Iodine chloride (ICl) 7791-25-5, Sulfuryl chloride 10024-97-2, Nitrous oxide, uses 10025-67-9, Sulfur monochloride
(electrolytes with strong oxidizing additives for lithium/sulfur batteries)

IT 67-68-5, Dmso, uses 68-12-2, Dmf, uses 110-60-1, Tetramethylenediamine 110-71-4, Monoglyme 110-86-1, Pyridine, uses 110-95-2, Tetramethylpropylenediamine 111-96-6, Diglyme 112-49-2, Triglyme 126-73-8, Tributyl phosphate, uses 127-19-5, n,n-Dimethylacetamide 143-24-8, Tetraglyme 512-56-1, Trimethyl phosphate 617-84-5, n,n-Diethylformamide 632-22-4, Tetramethylurea 680-31-9, Hexamethylphosphoramide, uses 685-91-6, n,n-Diethylacetamide 2832-49-7, n,n,n',n'-Tetraethylsulfamide 3030-47-5, Pentamethyldiethylenetriamine 7439-93-2, Lithium, uses 7439-93-2D, Lithium, intercalation compound 7704-34-9, Sulfur, uses 7704-34-9D, Sulfur, organic compound 7791-03-9, Lithium perchlorate 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 90076-65-6 115672-18-9, Lithium sulfide (Li2(S8)) 132843-44-8
(electrolytes with strong oxidizing additives for lithium/sulfur batteries)

L81 ANSWER 16 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:575465 HCAPLUS Full-text
DOCUMENT NUMBER: 137:143037
TITLE: Method for preparing thin fiber-structured polymer web
INVENTOR(S): Lee, Wha Seop; Jo, Seong Mu; Chun, Suk Won; Choi, Sung Won
PATENT ASSIGNEE(S): S. Korea
SOURCE: U.S. Pat. Appl. Publ., 8 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

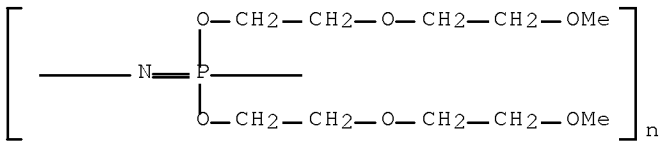
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20020100725	A1	20020801	US 2001-14550 <--	20011214
KR 2002063020	A	20020801	KR 2001-3685 <--	20010126
JP 2002249966	A	20020906	JP 2001-382608 <--	20011217
CN 1367276	A	20020904	CN 2002-102522 <--	20020125

PRIORITY APPLN. INFO.: KR 2001-3685 A 20010126 <--

ED Entered STN: 02 Aug 2002

AB Disclosed is a method for preparing a thin fiber-structured polymer web suitable for a high-speed and large-scale production using electrospinning. The method uses an electrospinning process to spin a solution containing a polymer in a volatile solvent to obtain a thin fiber-structured polymer web on a collector, in which case the temperature of the polymer solution is in the range of from 40° to the b.p. of the solvent. The porous, thin fiber-structured polymer web thus obtained is applicable to the isolation layer or the electrolytic layer for lithium-ion secondary battery , lithium-metal secondary battery or sulfur-based secondary battery, the isolation layer for fuel cells, filter, and so forth.

IT 98973-15-0, Poly(bis-(2-(2-methoxy-ethoxyethoxy))phosphazene
(method for preparing thin fiber-structured polymer web)
RN 98973-15-0 HCAPLUS
CN Poly[nitrilo[bis[2-(2-methoxyethoxy)ethoxy]phosphoranylidyne]] (CA INDEX NAME)



IC ICM B01D039-08
INCL 210503000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 37, 47
ST battery electrolyte layer fiber structured polymer

web; sulfur based secondary battery fiber structured polymer web; lithium secondary battery fiber structured polymer web; fuel cell fiber structured polymer web; filter fiber structured polymer web

IT Secondary batteries
(lithium; method for preparing thin fiber-structured polymer web)

IT Battery electrolytes
Coal tar pitch
Filters
Fuel cells
Petroleum pitch
Secondary batteries
Sensors
(method for preparing thin fiber-structured polymer web)

IT 9002-86-2, Polyvinyl chloride 9002-88-4, Polyethylene 9002-89-5, Polyvinyl alcohol 9002-98-6, PolyAziridine 9003-20-7, Polyvinyl acetate 9003-55-8, Butadiene-styrene copolymer 9004-34-6, Cellulose, uses 9004-35-7, Cellulose acetate 9004-36-8 9011-08-9 9011-14-7, Pmma 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer 24937-16-4, Nylon 12 24937-79-9, Pvdf 24980-34-5, Ethylene sulfide polymer 24980-41-4, Caprolactone homopolymer 25014-41-9, Polyacrylonitrile 25038-59-9, Polyethylene terephthalate, uses 25085-53-4, Isotactic polypropylene 25086-89-9, Vinyl acetate-vinyl pyrrolidone copolymer 25233-30-1, Polyaniline 25322-69-4, Polypropylene oxide 25569-53-3, Poly(ethylene succinate) 25749-57-9 26063-00-3, Polyhydroxybutyrate) 26100-51-6, Polylactic acid 26124-68-5, Polyglycolic acid 27083-66-5, Poly(propylene fumarate) 34346-01-5, Glycolic acid-DL-lactic acid copolymer 50327-22-5 98973-15-0, Poly(bis-(2-(2-methoxy-ethoxyethoxy))phosphazene 98973-15-0, Meep
(method for preparing thin fiber-structured polymer web)

L81 ANSWER 17 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:412896 HCAPLUS Full-text
DOCUMENT NUMBER: 137:207734
TITLE: Lithium fuel cells: I. Lithium/poly(organophosphazene) membrane anodes in KOH and seawater
AUTHOR(S): Urquidi-Macdonald, Mirna; Castaneda, Homero; Cannon, Angela M.
CORPORATE SOURCE: Department of Engineering Science and Mechanics, Pennsylvania State University, University Park, PA, 16802, USA
SOURCE: Electrochimica Acta (2002), 47(15), 2495-2503
CODEN: ELCAAV; ISSN: 0013-4686
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 03 Jun 2002
AB The main goal of our research project is to design safe, high energy and power d. lithium/water systems. We explored the feasibility of substituting the natural bilayer (formed on the lithium surface when lithium is in contact with water), for a thin polymeric film . By substituting the natural bilayer film we hope to reduce the parasitic reactions occurring at the lithium/water interface, thus yielding an increase in the anodic efficiency. We investigated the effect of placing or casting a thin, (lithium/ion-conducting) polymer layer on the lithium metal surface. This paper is part one in a series of two papers. Paper I presents the results obtained with a

lithium/polymer system, where the polymer was a monolayer of a polyphosphazene with 90% trifluoromethylphenoxy and 10% lithium carboxyphenoxy side groups (Polymer 4), or a multilayer film formed of one layer of poly[bis(methoxyethoxyethoxy)phosphazene] (MEEP) and one to three layers of Polymer 4 containing from 0 to 75 weight % Of lithium triflate salts. Paper II presents results obtained when the polymer layers were prepared using a polymer with equal amts. of methoxyethoxyethoxy and phenoxy side groups containing from 0 to 75 weight % Of lithium triflate salts. Phosphazene membranes have been designed and tailored to allow lithium ion conduction and prevent water migration to the surface of lithium metal. The phosphazene membranes enhance the safety of an aqueous lithium cell by inhibiting (or reducing) the reaction of lithium with water that evolves hydrogen at the anode. Original tests of lithium/phosphazene systems led to unpredictable open circuit voltages (OCVs). When the adhesion of the membrane to the lithium metal was improved, the OCV stabilized. The OCVs for the half-cell of lithium polymer aqueous electrolytes varies between -3.1 and -2.8 VSCE, depending on the membrane. The current densities for this polymer system are in the range of 10-6-10-3 A/cm2. The Coulombic anodic efficiency is assumed to be near 100%-as hydrogen evolution is not measurable. Some of the polymeric membranes developed pinholes with use. Layered systems have also been designed to avoid the development of pinholes over time. In this paper, we present the results obtained by using polyphosphazenes with a 9:1 ratio of trifluoromethylphenoxy and p-carboxyphenoxy side groups and the lithium salt of the carboxylate function. Poly(organophosphazene) membranes with a single layer and a multilayer structure were tested in 8 M KOH or synthetic seawater for up to 5 days.

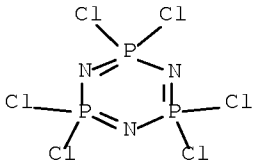
IT 25231-98-5DP, Poly(hexachlorocyclotriphosphazene), reaction products with sodium(trifluoromethyl)phenolate and sodium Pr hydroxybenzoate, hydrolyzed and lithiated 98973-15-0P
(lithium/poly(organophosphazene) membrane anodes in KOH and seawater)

RN 25231-98-5 HCAPLUS

CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexachloro-, homopolymer (CA INDEX NAME)

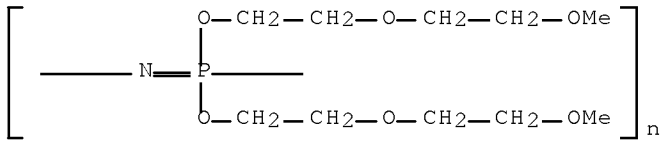
CM 1

CRN 940-71-6
CMF Cl6 N3 P3

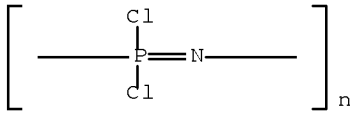


RN 98973-15-0 HCAPLUS

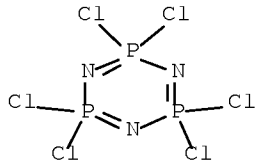
CN Poly[nitrilo[bis[2-(2-methoxyethoxy)ethoxy]phosphoranylidyne]] (CA INDEX NAME)



IT 26085-02-9P, Poly(dichlorophosphazene)
(lithium/poly(organophosphazene) membrane anodes in KOH and seawater)
RN 26085-02-9 HCAPLUS
CN Poly[nitrilo(dichlorophosphoranylidyne)] (CA INDEX NAME)



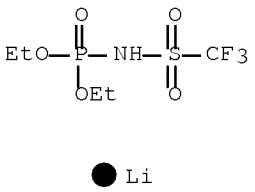
IT 940-71-6, Hexachlorocyclotriphosphazene
(polymerization in fabrication of lithium/poly(organophosphazene) membrane anodes in KOH and seawater)
RN 940-71-6 HCAPLUS
CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexachloro- (CA INDEX NAME)



CC 72-2 (Electrochemistry)
Section cross-reference(s): 23, 25, 52
ST lithium water interface primary battery polyorganophosphazene membrane anodes
IT Battery anodes
Electrode-electrolyte interface
Membrane electrodes
Multilayers
Seawater
(lithium/poly(organophosphazene) membrane anodes in KOH and seawater)
IT Fuel cells
Primary batteries
(lithium/poly(organophosphazene) membrane anodes in KOH and seawater in relation to)
IT Open circuit potential
(of lithium covered with film made of THF with

lithium triflate)
IT 25231-98-5DP, Poly(hexachlorocyclotriphosphazene), reaction products with sodium(trifluoromethyl)phenolate and sodium Pr hydroxybenzoate, hydrolyzed and lithiated 35285-69-9DP, Sodium propyl p-hydroxybenzoate, reaction products with poly(dichlorophosphazene) and sodium (trifluoromethyl)phenolate, hydrolyzed and lithiated 42989-44-6DP, Sodium 3-(trifluoromethyl)phenolate, reaction products with poly(dichlorophosphazene) and sodium Pr hydroxybenzoate, hydrolyzed and lithiated 98973-15-0P
(lithium/poly(organophosphazene) membrane anodes in KOH and seawater)
IT 26085-02-9P, Poly(dichlorophosphazene)
(lithium/poly(organophosphazene) membrane anodes in KOH and seawater)
IT 109-99-9, THF, uses 33454-82-9, Lithium triflate
(of lithium covered with film made of THF with)
IT 940-71-6, Hexachlorocyclotriphosphazene
(polymerization in fabrication of lithium/poly(organophosphazene) membrane anodes in KOH and seawater)
REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L81 ANSWER 18 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:241431 HCAPLUS Full-text
DOCUMENT NUMBER: 137:172293
TITLE: Recent advances in lithium-ion and lithium-polymer batteries
AUTHOR(S): Venkatasetty, H. V.; Jeong, Y. U.
CORPORATE SOURCE: H. V. Setty Enterprises Inc., Burnsville, MN, USA
SOURCE: Annual Battery Conference on Applications and Advances, 17th, Long Beach, CA, United States, Jan. 15-18, 2002 (2002), 173-178.
Editor(s): Das, Radhe S. L.; Frank, Harvey.
Institute of Electrical and Electronics Engineers: New York, N. Y.
CODEN: 69CKHG; ISBN: 0-7803-7132-1
DOCUMENT TYPE: Conference
LANGUAGE: English
ED Entered STN: 30 Mar 2002
AB Synthesis of new Li salts and copolymers and the properties of solid polymer electrolyte films (SPE) are described. Novel electrolytes and electrode materials were developed to improve the capacity, energy d., cycle life, and the performance of Li batteries while enhancing safety. These batteries have the potential to meet the needs of medical devices and other portable electronic devices. Improved cathode materials are being developed and composite anodes are being prepared and evaluated. With respect to electrolytes, new materials with high conductivity and electrochem. stability to reduce the size and weight of the batteries are studied. The performance characteristics of prototype cells with SPE films as well as solns. of super acid-based Li salts are presented and discussed in terms of their structure and properties.
IT 338746-30-8
(recent advances in lithium-ion and lithium-polymer batteries)
RN 338746-30-8 HCAPLUS
CN Phosphoramidic acid, [(trifluoromethyl)sulfonyl]-, diethyl ester, lithium salt (9CI) (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 35, 72
ST lithium imide salt rechargeable battery polymer electrolyte film cond
IT Secondary batteries
(lithium; recent advances in lithium-ion and lithium-polymer batteries)
IT Battery anodes
Battery cathodes
Battery electrolytes
Ionic conductivity
Polymer electrolytes
X-ray diffraction
(recent advances in lithium-ion and lithium-polymer batteries)
IT Fluoropolymers, uses
(recent advances in lithium-ion and lithium-polymer batteries)
IT Macromonomers
(recent advances in lithium-ion and lithium-polymer batteries)
IT Polyoxyalkylenes, reactions
(recent advances in lithium-ion and lithium-polymer batteries)
IT 7782-42-5, Graphite, uses
(MCMB, anode; recent advances in lithium-ion and lithium-polymer batteries)
IT 2699-79-8D, Sulfonyl fluoride, perfluoroalkyl
(Perfluoroalkyl; recent advances in lithium-ion and lithium-polymer batteries)
IT 12057-17-9, Lithium manganese oxide (LiMn2O4) 132843-44-8
(recent advances in lithium-ion and lithium-polymer batteries)
IT 7440-44-0, Carbon, uses
(recent advances in lithium-ion and lithium-polymer batteries)
IT 9003-07-0P, Celgard 2300
(recent advances in lithium-ion and lithium-polymer batteries)
IT 13463-67-7, Titanium oxide (TiO2), uses 24937-79-9, Polyvinylidene fluoride
(recent advances in lithium-ion and lithium-polymer batteries)
IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 600-00-0, Ethyl 2-bromo isobutyrate 616-38-6, Dimethylcarbonate 7440-50-8, Copper, uses 63310-83-8, Dicopper dibromide
(recent advances in lithium-ion and lithium-polymer

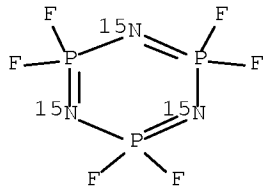
batteries)
IT 189217-56-9 210227-37-5 338746-29-5 338746-30-8
447448-05-7 447448-06-8 447448-07-9 447448-08-0 447448-09-1
447448-10-4 447448-11-5 447448-12-6 447448-13-7 447448-14-8
447448-15-9
(recent advances in lithium-ion and lithium-polymer batteries)
IT 176719-70-3P
(recent advances in lithium-ion and lithium-polymer batteries)
IT 109-72-8, n-Butyllithium, reactions 375-72-4, Perfluorobutylsulfonyl fluoride 7664-41-7, Ammonia, reactions 25322-68-3, Polyethylene oxide 37275-48-2, Dipyridyl 87105-87-1, Poly(ethylene glycol) methyl ether methacrylate homopolymer
(recent advances in lithium-ion and lithium-polymer batteries)
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L81 ANSWER 19 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:185513 HCAPLUS Full-text
DOCUMENT NUMBER: 136:203115
TITLE: Additive for secondary nonaqueous electrolyte battery and double layer capacitor, the battery, and the capacitor
INVENTOR(S): Otsuki, Masashi; Endo, Shigeki; Ogino, Takao
PATENT ASSIGNEE(S): Bridgestone Corporation, Japan
SOURCE: PCT Int. Appl., 35 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002021631	A1	20020314	WO 2001-JP7692 <--	20010905
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2001084432	A	20020322	AU 2001-84432 <--	20010905
CA 2422109	A1	20030307	CA 2001-2422109 <--	20010905
EP 1329975	A1	20030723	EP 2001-963433 <--	20010905
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
US 20030175598	A1	20030918	US 2003-363542 <--	20030305

US 7099142 B2 20060829
PRIORITY APPLN. INFO.: JP 2000-272082 A 20000907
<--
JP 2000-272083 A 20000907
<--
WO 2001-JP7692 W 20010905
<--

ED Entered STN: 15 Mar 2002
AB The additive contains a phosphazene derivative (PNF2)3-14.
IT 72924-67-5
(cyclic phosphazene additives in nonaq. electrolyte solns. for secondary lithium batteries and double layer capacitors)
RN 72924-67-5 HCAPLUS
CN 1,3,5,2,4,6-Triazatriphosphorine-1,3,5-15N3, 2,2,4,4,6,6-hexafluoro-2,2,4,4,6,6-hexahydro- (9CI) (CA INDEX NAME)



IC ICM H01M010-40
ICS H01M006-16; H01G009-038
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST secondary nonaq battery phosphazene deriv additive; double layer capacitor phosphazene deriv additive
IT Battery electrolytes
(cyclic phosphazene additives in nonaq. electrolyte solns. for secondary lithium batteries)
IT Cyclophosphazenes
(cyclic phosphazene additives in nonaq. electrolyte solns. for secondary lithium batteries and double layer capacitors)
IT Capacitors
(double layer; cyclic phosphazene additives in nonaq. electrolyte solns. for double layer capacitors)
IT 108-32-7, Propylene carbonate 429-06-1, Tetraethylammonium tetrafluoroborate
(cyclic phosphazene additives in nonaq. electrolyte solns. for double layer capacitors)
IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 14283-07-9, Lithium fluoroborate 21324-40-3, Lithium hexafluorophosphate
(cyclic phosphazene additives in nonaq. electrolyte solns. for secondary lithium batteries)
IT 72924-67-5
(cyclic phosphazene additives in nonaq. electrolyte solns. for secondary lithium batteries and double layer capacitors)
REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE

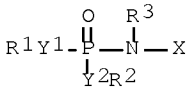
RE FORMAT

L81 ANSWER 20 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:185512 HCAPLUS Full-text
DOCUMENT NUMBER: 136:219552
TITLE: Additive for secondary nonaqueous electrolyte battery and double layer capacitor
INVENTOR(S): Otsuki, Masashi; Endo, Shigeki; Ogino, Takao
PATENT ASSIGNEE(S): Bridgestone Corporation, Japan
SOURCE: PCT Int. Appl., 47 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

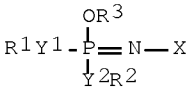
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002021630	A1	20020314	WO 2001-JP7691 <--	20010905
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2001084431	A	20020322	AU 2001-84431 <--	20010905
CA 2422108	A1	20030307	CA 2001-2422108 <--	20010905
EP 1328036	A1	20030716	EP 2001-963432 <--	20010905
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
US 20030175597	A1	20030918	US 2003-363172 <--	20030331
US 7067219	B2	20060627		

PRIORITY APPLN. INFO.:
JP 2000-272084 A 20000907 <--
JP 2000-272085 A 20000907 <--
WO 2001-JP7691 W 20010905 <--

OTHER SOURCE(S): MARPAT 136:219552
ED Entered STN: 15 Mar 2002
GI



I



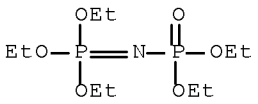
II

AB The additive contains phosphazene derivs. I or II, where R1-3 = monovalnet substituent or halogen atom; X = substituent containing C, Si, Ge, Sn, N, P, As, Sb, Bi, O, S, Se, Te, and/or Po; and Y1 and Y2 = bivalent connecting group, bivalent element, or single bond.

IT 2397-48-0 3654-42-0
(phosphazene derivative additives in nonaq. electrolytes for secondary lithium batteries and double layer capacitors)

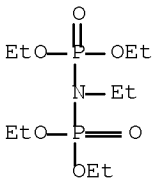
RN 2397-48-0 HCAPLUS

CN Phosphorimidic acid, (diethoxyphosphinyl)-, triethyl ester (9CI) (CA INDEX NAME)



RN 3654-42-0 HCAPLUS

CN Imidodiphosphoric acid, ethyl-, tetraethyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IC ICM H01M010-40
ICS H01M006-16; H01G009-038

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 76

ST secondary battery nonaq electrolyte phosphazene deriv additive; double layer capacitor electrolyte phosphazene deriv additive

IT Capacitors
(double layer; electrolytes containing phosphazene derivative additives for double layer capacitors)

IT Battery electrolytes
(electrolytes containing phosphazene derivative additives for secondary lithium batteries)

IT Phosphazenes
(phosphazene derivative additives in nonaq. electrolytes for secondary lithium batteries and double layer capacitors)

IT 108-32-7, Propylene carbonate 429-06-1, Tetraethylammonium tetrafluoroborate
(electrolytes containing phosphazene derivative additives for double layer capacitors)

IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate

14283-07-9, Lithium fluoroborate 21324-40-3, Lithium hexafluorophosphate
(electrolytes containing phosphazene derivative additives for secondary lithium batteries)

IT 2397-48-0 3654-42-0
(phosphazene derivative additives in nonaq. electrolytes for secondary lithium batteries and double layer capacitors)

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

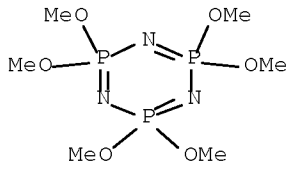
L81 ANSWER 21 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:185510 HCAPLUS Full-text
DOCUMENT NUMBER: 136:203113
TITLE: Nonaqueous electrolyte solution additive, secondary nonaqueous electrolyte battery, and nonaqueous double layer capacitor
INVENTOR(S): Otsuki, Masashi; Endo, Shigeki; Ogino, Takao
PATENT ASSIGNEE(S): Bridgestone Corporation, Japan
SOURCE: PCT Int. Appl., 42 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002021628	A1	20020314	WO 2001-JP7689 <--	20010905
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2001084429	A	20020322	AU 2001-84429 <--	20010905
CA 2422106	A1	20030307	CA 2001-2422106 <--	20010905
EP 1347530	A1	20030924	EP 2001-963430 <--	20010905
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
CN 1592984	A	20050309	CN 2001-815114 <--	20010905
US 20030190531	A1	20031009	US 2003-363541 <--	20030305

PRIORITY APPLN. INFO.:
JP 2000-272078 A 20000907 <--
JP 2000-272079 A 20000907 <--
WO 2001-JP7689 W 20010905 <--

OTHER SOURCE(S): MARPAT 136:203113

ED Entered STN: 15 Mar 2002
AB The additive is a phosphazene derivative (PNR2)n (R = halogen or monovalent substituent, n = 3-6), which is a solid at 25°. The battery and the capacitor use an electrolyte containing the additive.
IT 957-13-1
(nonaq. electrolyte solns. containing phosphazene derivative additives for batteries and capacitors)
RN 957-13-1 HCAPLUS
CN 2λ5,4λ5,6λ5-1,3,5,2,4,6-Triazatriphosphorine
1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexamethoxy- (CA INDEX NAME)



IC ICM H01M010-40
ICS H01M006-16; H01G009-038
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 76
ST secondary battery nonaq electrolyte phosphazene additive; double layer capacitor nonaq electrolyte phosphazene additive
IT Capacitors
(double layer; nonaq. electrolyte solns. containing phosphazene derivative additives for double layer capacitors)
IT Phosphazenes
(nonaq. electrolyte solns. containing phosphazene derivative additives for batteries and capacitors)
IT Battery electrolytes
(nonaq. electrolyte solns. containing phosphazene derivative additives for secondary lithium batteries)
IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 14283-07-9, Lithium fluoroborate 21324-40-3, Lithium hexafluorophosphate
(nonaq. electrolyte solns. containing phosphazene derivative additives for batteries and capacitors)
IT 957-13-1
(nonaq. electrolyte solns. containing phosphazene derivative additives for batteries and capacitors)
REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L81 ANSWER 22 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:935958 HCAPLUS Full-text
DOCUMENT NUMBER: 136:56445
TITLE: Methods for preparation of microporous solid electrolytes for rechargeable batteries
INVENTOR(S): Jang, Dong Hun; Kim, Sa Heum; Kim, Han Jun
PATENT ASSIGNEE(S): Finecell Co., Ltd., S. Korea

SOURCE: PCT Int. Appl., 45 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001099220	A1	20011227	WO 2000-KR482 <--	20000524
W: CN, JP, KR, US RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 1290749	A1	20030312	EP 2000-927894 <--	20000524
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY				
JP 2003536233	T	20031202	JP 2002-503968 <--	20000524

PRIORITY APPLN. INFO.: WO 2000-KR482 W 20000524 <--

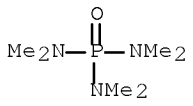
ED Entered STN: 28 Dec 2001

AB The present invention is directed to an electrolyte film and/or a solid electrolyte, having a microporous structure, for a rechargeable cell. According to the present invention, when preparing the electrolyte film and/or the solid electrolyte, an inorg. absorbent is added in the amount of more than 70% by weight in a polymer matrix to prevent the porous structure from being destructed at the cell-assembling process such as lamination or pressing, whereby the absorbing power of a liquid electrolyte to the solid electrolyte film and the ionic conductivity can be maintained. The inorg. absorbent contained over the specific amount, together with the microporous structure, improves the capacity of absorbing the liquid electrolyte and, in particular, works as a structure element of increasing the mech. strength of electrolyte film and/or solid electrolyte. Therefore, the good ionic conductivity can be maintained even after the assembly of cell.

IT 680-31-9, Hexamethylphosphoramide, uses
(methods for preparation of microporous solid electrolytes for rechargeable batteries)

RN 680-31-9 HCAPLUS

CN Phosphoric triamide, N,N,N',N',N'',N''-hexamethyl- (CA INDEX NAME)



IC ICM H01M010-38

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

ST battery microporous solid electrolyte prepn

IT Polyvinyl acetals
(formals; methods for preparation of microporous solid electrolytes for rechargeable batteries)

IT Molecular sieves

(mesoporous; methods for preparation of microporous solid electrolytes for rechargeable batteries)

IT Battery electrolytes
Ionic conductivity
Secondary batteries
(methods for preparation of microporous solid electrolytes for rechargeable batteries)

IT Carbon black, uses
Clay minerals
EPDM rubber
Fluoropolymers, uses
Mica-group minerals, uses
Nitrile rubber, uses
Phyllosilicate minerals
Polycarbonates, uses
Polycarbosilanes
Polyethers, uses
Polyimides, uses
Polymers, uses
Polyoxyalkylenes, uses
Polysulfones, uses
Polyurethanes, uses
Zeolites (synthetic), uses
(methods for preparation of microporous solid electrolytes for rechargeable batteries)

IT 96-48-0, γ-Butyrolactone 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 111-96-6, Diglyme 112-49-2, Triglyme 126-33-0, Sulfolane 143-24-8, Tetraglyme 505-22-6, 1,3-Dioxane 556-65-0, Lithium thiocyanate 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 4437-85-8, Butylene carbonate 7429-90-5, Aluminum, uses 7440-50-8, Copper, uses 7782-42-5, Graphite, uses 7791-03-9, Lithium perchlorate 12057-17-9, Lithium manganese oxide limn2o4 12190-79-3, Cobalt lithium oxide colio2 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 90076-65-6 132404-42-3
(methods for preparation of microporous solid electrolytes for rechargeable batteries)

IT 67-63-0, Isopropanol, uses 79-41-4D, Methacrylic acid, esters, polymers 1309-48-4, Magnesium oxide, uses 1318-93-0, Montmorillonite, uses 9002-86-2, Polyvinyl chloride 9002-88-4, Polyethylene 9002-89-5, Polyvinyl alcohol 9002-93-1, Triton x 100 9003-07-0, Polypropylene 9003-27-4, Polyisobutylene 9003-29-6, Polybutylene 9011-14-7, Pmma 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer 9012-09-3, Cellulose triacetate 12026-53-8, Paragonite 17831-71-9, Tetraethylene glycol diacrylate 24937-79-9, Polyvinylidene fluoride 25014-41-9, Polyacrylonitrile 25322-68-3, Peo 31900-57-9, Polydimethylsiloxane 114481-92-4, Maleic anhydride-vinylidene fluoride copolymer
(methods for preparation of microporous solid electrolytes for rechargeable batteries)

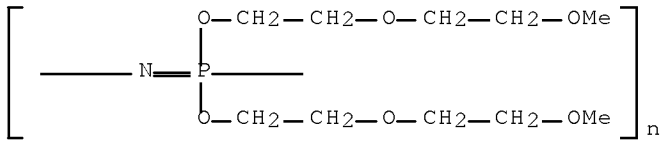
IT 56-81-5, Glycerol, uses 60-29-7, Ether, uses 64-17-5, Ethanol, uses 67-64-1, Acetone, uses 67-66-3, Chloroform, uses 67-68-5, Dmso, uses 68-12-2, Dmf, uses 75-05-8, Acetonitrile, uses 75-09-2, Dichloromethane, uses 96-47-9, 2-Methyltetrahydrofuran 107-21-1, Ethylene glycol, uses 108-94-1, Cyclohexanone, uses 109-99-9, Thf, uses 123-91-1, Dioxane, uses 127-19-5, Dimethylacetamide 141-78-6, Ethyl acetate, uses 680-31-9, Hexamethylphosphoramide, uses 872-50-4, n-Methylpyrrolidone, uses

7732-18-5, Water, uses 25917-35-5, Hexanol 30899-19-5, Pentanol 35296-72-1, Butanol
(methods for preparation of microporous solid electrolytes for rechargeable batteries)
IT 9003-18-3
(nitrile rubber, methods for preparation of microporous solid electrolytes for rechargeable batteries)
IT 1344-28-1, Alumina, uses 7631-86-9, Silica, uses
(porous; methods for preparation of microporous solid electrolytes for rechargeable batteries)
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L81 ANSWER 23 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:868873 HCAPLUS Full-text
DOCUMENT NUMBER: 136:9101
TITLE: Fabrication method for lithium secondary battery with polymer electrolyte prepared by spray method
INVENTOR(S): Yun, Kyung Suk; Cho, Byung Won; Cho, Won Il; Kim, Hyung Sun; Kim, Un Seok
PATENT ASSIGNEE(S): Korea Institute of Science and Technology, S. Korea
SOURCE: PCT Int. Appl., 34 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001091222	A1	20011129	WO 2000-KR515 <--	20000522
W: JP, KR, US				
PRIORITY APPLN. INFO.:			WO 2000-KR515 <--	20000522

ED Entered STN: 30 Nov 2001
AB The present invention provides a lithium secondary battery and its fabrication method. More particularly, the present invention provides a lithium secondary battery comprising a porous polymer electrolyte and its fabrication method, wherein the polymer electrolyte is fabricated by the following process: (a) dissolving at least one polymer with plasticizers and organic electrolyte solvents to obtain at least one polymeric electrolyte solution; (b) adding the obtained polymeric electrolyte solution to a barrel of a spray machine, and (c) spraying the polymeric electrolyte solution onto a substrate using a nozzle to form a porous polymer electrolyte film. The lithium secondary battery of the present invention has advantages of better adhesion with electrodes, good mech. strength, better performance at low and high temps., and better compatibility with organic electrolytes of a lithium secondary battery.
IT 98973-15-0, Poly[bis(2-(2-methoxyethoxyethoxy))-phosphazene]
(fabrication method for lithium secondary battery with polymer electrolyte prepared by spray method)
RN 98973-15-0 HCAPLUS
CN Poly[nitrilo[bis[2-(2-methoxyethoxy)ethoxy]phosphoranylidyne]] (CA INDEX NAME)



IC ICM H01M010-38
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST polymer electrolyte lithium secondary battery; spray method fabrication polymer electrolyte lithium secondary battery
IT Inductance
(electrostatic, spray method; fabrication method for lithium secondary battery with polymer electrolyte prepared by spray method)
IT Battery electrolytes
Lamination
Plasticizers
Polymer electrolytes
(fabrication method for lithium secondary battery with polymer electrolyte prepared by spray method)
IT Fluoropolymers, uses
Polyoxyalkylenes, uses
(fabrication method for lithium secondary battery with polymer electrolyte prepared by spray method)
IT Fluoropolymers, uses
(filling agent; fabrication method for lithium secondary battery with polymer electrolyte prepared by spray method)
IT Secondary batteries
(lithium; fabrication method for lithium secondary battery with polymer electrolyte prepared by spray method)
IT Alcohols, uses
(plasticizer; fabrication method for lithium secondary battery with polymer electrolyte prepared by spray method)
IT Coating process
(spray; fabrication method for lithium secondary battery with polymer electrolyte prepared by spray method)
IT 79-20-9, Methyl acetate 105-37-3, Ethyl propionate 109-99-9, Thf, uses 141-78-6, Ethyl acetate, uses 554-12-1, Methyl propionate 7782-42-5, Graphite, uses 7791-03-9, Lithium perchlorate 9002-86-2, Pvc 9002-88-4, Polyethylene 9003-07-0, Polypropylene 9003-20-7, Polyvinyl acetate 9004-34-6, Cellulose, uses 9004-35-7, Cellulose acetate 9004-36-8 9004-39-1, Cellulose acetate propionate 9010-76-8, Acrylonitrile-vinylidene chloride copolymer 9010-88-2, Ethyl acrylate-methylmethacrylate copolymer 9011-14-7, Pmma 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer 12190-79-3, Cobalt lithium oxide colio2 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate 24937-79-9, Pvdf 24968-79-4, Acrylonitrile-methyl acrylate copolymer 24980-34-5, Polyethylenesulfide 25014-41-9, Polyacrylonitrile 25086-89-9, Vinyl acetate-vinyl pyrrolidone copolymer 25322-68-3, Peo 25322-69-4, Polypropylene oxide 25667-11-2, Polyethylenesuccinate 26913-06-4, Poly[imino(1,2-ethanediyl)] 28726-47-8, Poly(oxymethylene-oxyethylene) 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 98973-15-0 , Poly[bis(2-(2-methoxyethoxyethoxy))-phosphazene]

(fabrication method for lithium secondary battery with polymer electrolyte prepared by spray method)

IT 554-13-2, Lithium carbonate 1304-28-5, Barium oxide bao, uses 1309-48-4, Magnesia, uses 1310-65-2, Lithium hydroxide 1313-59-3, Sodium oxide, uses 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 7789-24-4, Lithium fluoride, uses 9002-84-0, Ptfe 12003-67-7, Aluminum lithium oxide allio2 12047-27-7, Barium titanium oxide batio3, uses 12057-24-8, Lithia, uses 13463-67-7, Titania, uses 26134-62-3, Lithium nitride

(filling agent; fabrication method for lithium secondary battery with polymer electrolyte prepared by spray method)

IT 67-64-1, Acetone, uses 67-68-5, Dmso, uses 68-12-2, Dmf, uses 80-73-9, 1,3-Dimethyl-2-imidazolidinone 96-48-0, Butyrolactone 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 110-71-4, 1,2-Dimethoxyethane 127-19-5, n,n-Dimethyl acetamide 143-24-8, Tetraethylene glycol dimethyl ether 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 872-50-4, n-Methyl-2-pyrrolidone, uses 4437-85-8, Butylene carbonate 26101-52-0

(plasticizer; fabrication method for lithium secondary battery with polymer electrolyte prepared by spray method)

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L81 ANSWER 24 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:868872 HCAPLUS Full-text
DOCUMENT NUMBER: 136:9100
TITLE: A lithium secondary battery comprising composite polymer electrolyte fabricated by a spray method
INVENTOR(S): Yun, Kyung Suk; Cho, Byung Won; Cho, Won Il; Kim, Hyung Sun; Kim, Un Seok
PATENT ASSIGNEE(S): Korea Institute of Science and Technology, S. Korea
SOURCE: PCT Int. Appl., 38 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001091221	A1	20011129	WO 2000-KR514 <--	20000522

W: JP, KR, US

PRIORITY APPLN. INFO.: WO 2000-KR514 <-- 20000522

ED Entered STN: 30 Nov 2001

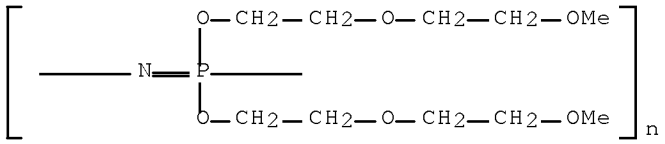
AB The present invention provides a novel composite polymer electrolyte, lithium secondary battery comprising the composite polymer electrolyte and their fabrication methods. More particularly, the present invention provides the composite polymer electrolyte comprising a porous polymer electrolyte matrix with particles, fibers or mixture thereof having diams. of 1-3000 nm, polymers and lithium salt-dissolved organic electrolyte solns. incorporated into the porous polymer matrix. The composite polymer electrolyte of the present invention has advantages of better adhesion with electrodes, good mech. strength, better performance at low and high temps., better compatibility with

organic electrolytes of lithium secondary battery and it can be applied to the manufacture of lithium secondary batteries.

IT 98973-15-0, Poly[bis(2-(2-methoxyethoxyethoxy))phosphazene]
(lithium secondary battery comprising composite polymer electrolyte fabricated by spray method)

RN 98973-15-0 HCAPLUS

CN Poly[nitrilo[bis[2-(2-methoxyethoxy)ethoxy]phosphoranylidyne]] (CA INDEX NAME)



IC ICM H01M010-38

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

ST lithium secondary battery composite polymer electrolyte; spray method fabrication composite polymer electrolyte

IT Inductance
(electrostatic induction spray; lithium secondary battery comprising composite polymer electrolyte fabricated by spray method)

IT Fluoropolymers, uses
(filling agent; lithium secondary battery comprising composite polymer electrolyte fabricated by spray method)

IT Battery electrolytes
Plasticizers
Polymer electrolytes
(lithium secondary battery comprising composite polymer electrolyte fabricated by spray method)

IT Fluoropolymers, uses
Polyoxyalkylenes, uses
(lithium secondary battery comprising composite polymer electrolyte fabricated by spray method)

IT Secondary batteries
(lithium; lithium secondary battery comprising composite polymer electrolyte fabricated by spray method)

IT Alcohols, uses
(plasticizer; lithium secondary battery comprising composite polymer electrolyte fabricated by spray method)

IT Coating process
(spray; lithium secondary battery comprising composite polymer electrolyte fabricated by spray method)

IT 554-13-2, Lithium carbonate 1304-28-5, Barium oxide bao, uses 1309-48-4, Magnesia, uses 1310-65-2, Lithium hydroxide 1313-59-3, Sodium oxide na2o, uses 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 7789-24-4, Lithium fluoride, uses 9002-84-0, Ptfe 12003-67-7, Aluminum lithium oxide allio2 12047-27-7, Barium titanium oxide batio3, uses 12057-24-8, Lithia, uses 13463-67-7, Titania, uses 26134-62-3, Lithium nitride
(filling agent; lithium secondary battery comprising composite polymer electrolyte fabricated by spray method)

IT 79-20-9, Methyl acetate 96-48-0, γ-Butyrolactone 96-49-1, Ethylene carbonate 105-37-3, Ethyl propionate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 109-99-9, Thf, uses 110-71-4, 1,2-Dimethoxyethane 127-19-5, Dimethyl acetamide 141-78-6, Ethyl acetate, uses 554-12-1, Methyl propionate 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 4437-85-8, Butylene carbonate 7782-42-5, Graphite, uses 7791-03-9, Lithium perchlorate 9002-86-2, Pvc 9002-88-4, Polyethylene 9003-07-0, Polypropylene 9003-20-7, Polyvinyl acetate 9004-34-6, Cellulose, uses 9004-35-7, Cellulose acetate 9004-36-8 9004-39-1, Cellulose acetate propionate 9010-76-8, Acrylonitrile-vinylidene chloride copolymer 9010-88-2, Ethyl acrylate-methyl methacrylate copolymer 9011-14-7, Pmma 9011-17-0, Hexafluoropropylene-vinylidenefluoride copolymer 12190-79-3, Cobalt lithium oxide colio2 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate 24937-79-9, Pvdf 24968-79-4, Acrylonitrile-methylacrylate copolymer 24980-34-5, Polyethylene sulfide 25014-41-9, Polyacrylonitrile 25086-89-9, Vinyl acetate-vinylpyrrolidone copolymer 25322-68-3, Peo 25322-69-4, Polypropylene oxide 25667-11-2, Polyethylenesuccinate 25721-76-0, Polyethylene glycol dimethacrylate 26913-06-4, Poly[imino(1,2-ethanediyl)] 28726-47-8, Poly(oxymethylene-oxyethylene) 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 98973-15-0, Poly[bis(2-(2-methoxyethoxyethoxy))phosphazene]
(lithium secondary battery comprising composite polymer electrolyte fabricated by spray method)

IT 67-64-1, Acetone, uses 67-68-5, Dmso, uses 68-12-2, Dmf, uses 80-73-9, 1,3-Dimethyl-2-imidazolidinone 143-24-8, Tetraethylene glycol dimethyl ether 872-50-4, n-Methyl-2-pyrrolidone, uses 26101-52-0
(plasticizer; lithium secondary battery comprising composite polymer electrolyte fabricated by spray method)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L81 ANSWER 25 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:868871 HCAPLUS Full-text
DOCUMENT NUMBER: 136:9099
TITLE: Fabrication of a lithium secondary battery comprising a hybrid polymer electrolyte prepared by a spray method
INVENTOR(S): Yun, Kyung Suk; Cho, Byung Won; Cho, Won Il; Kim, Hyung Sun; Kim, Un Seok
PATENT ASSIGNEE(S): Korea Institute of Science and Technology, S. Korea
SOURCE: PCT Int. Appl., 39 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001091220	A1	20011129	WO 2000-KR513 <--	20000522

W: JP, KR, US

PRIORITY APPLN. INFO.: WO 2000-KR513 20000522

<--

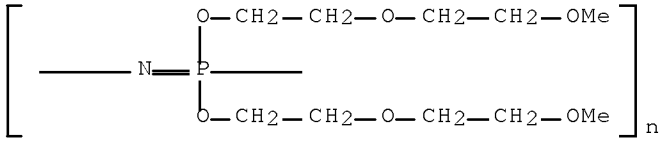
ED Entered STN: 30 Nov 2001

AB The present invention provides a novel hybrid polymer electrolyte, a lithium secondary battery comprising the hybrid polymer electrolyte and their fabrication methods. More particularly, the present invention provides the hybrid polymer electrolyte comprising a porous polymer matrix with particles, fibers or mixture thereof having diams. of 1-3000 nm, polymers and lithium salt-dissolved organic electrolyte solns. incorporated into the porous polymer matrix. The hybrid polymer electrolyte has advantages of better adhesion with electrodes, good mech. strength, better performance at low- and high-temps., better compatibility with organic electrolytes of a lithium secondary battery and it can be applied to the manufacture of lithium secondary batteries.

IT 98973-15-0, Poly[bis(2-(2-methoxyethoxyethoxy))phosphazene]
(fabrication of lithium secondary battery comprising hybrid polymer electrolyte prepared by spray method)

RN 98973-15-0 HCAPLUS

CN Poly[nitrilo[bis[2-(2-methoxyethoxy)ethoxy]phosphoranylidyne]] (CA INDEX NAME)



IC ICM H01M010-38

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

ST lithium secondary battery hybrid polymer electrolyte; spray method hybrid polymer electrolyte lithium secondary battery

IT Inductance
(electrostatic, spray method; fabrication of lithium secondary battery comprising hybrid polymer electrolyte prepared by spray method)

IT Battery electrolytes
Plasticizers
Polymer electrolytes
(fabrication of lithium secondary battery comprising hybrid polymer electrolyte prepared by spray method)

IT Fluoropolymers, uses
Polyoxyalkylenes, uses
(fabrication of lithium secondary battery comprising hybrid polymer electrolyte prepared by spray method)

IT Fluoropolymers, uses
(filling agent; fabrication of lithium secondary battery comprising hybrid polymer electrolyte prepared by spray method)

IT Secondary batteries
(lithium; fabrication of lithium secondary battery comprising hybrid polymer electrolyte prepared by spray method)

IT Alcohols, uses
(plasticizer; fabrication of lithium secondary battery comprising hybrid polymer electrolyte prepared by spray method)

IT Coating process
(spray; fabrication of lithium secondary battery comprising hybrid polymer electrolyte prepared by spray method)

IT 79-20-9, Methyl acetate 96-48-0, γ-Butyrolactone 96-49-1, Ethylene carbonate 105-37-3, Ethyl propionate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 109-99-9, Thf, uses 110-71-4, 1,2-Dimethoxyethane 127-19-5, Dimethyl acetamide 141-78-6, Ethyl acetate, uses 554-12-1, Methyl propionate 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 4437-85-8, Butylene carbonate 7782-42-5, Graphite, uses 7791-03-9, Lithium perchlorate 9002-86-2, Pvc 9002-88-4, Polyethylene 9003-07-0, Polypropylene 9003-20-7, Polyvinyl acetate 9004-34-6, Cellulose, uses 9004-35-7, Cellulose acetate 9004-36-8 9004-39-1, Cellulose acetate propionate 9010-76-8, Acrylonitrile-vinylidene chloride copolymer 9010-88-2, Ethyl acrylate-methyl methacrylate copolymer 9011-14-7, Pmma 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer 12190-79-3, Cobalt lithium oxide colio2 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate 24936-67-2, Polyethylene sulfide 24937-79-9, Polyvinylidene fluoride 24968-79-4, Acrylonitrile-methylacrylate copolymer 25014-41-9, Polyacrylonitrile 25086-89-9, Vinyl acetate-vinylpyrrolidone copolymer 25322-68-3, Peo 25322-69-4, Polypropylene oxide 25667-11-2, Polyethylene succinate 26570-48-9, Polyethylene glycol diacrylate 26913-06-4, Poly[imino(1,2-ethanediyl)] 28726-47-8, Poly(oxymethyleneoxyethylene) 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 98973-15-0, Poly[bis(2-(2-methoxyethoxyethoxy))phosphazene]
(fabrication of lithium secondary battery comprising hybrid polymer electrolyte prepared by spray method)

IT 68-12-2, Dmf, uses 872-50-4, n-Methyl-2-pyrrolidone, uses 26101-52-0
(fabrication of lithium secondary battery comprising hybrid polymer electrolyte prepared by spray method)

IT 554-13-2, Lithium carbonate 1304-28-5, Barium oxide bao, uses 1309-48-4, Magnesia, uses 1310-65-2, Lithium hydroxide 1313-59-3, Sodium oxide na2o, uses 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 7789-24-4, Lithium fluoride, uses 9002-84-0, Ptfe 12003-67-7, Aluminum lithium oxide allio2 12047-27-7, Barium titanium oxide batio3, uses 12057-24-8, Lithia, uses 13463-67-7, Titania, uses 26134-62-3, Lithium nitride
(filling agent; fabrication of lithium secondary battery comprising hybrid polymer electrolyte prepared by spray method)

IT 67-64-1, Acetone, uses 67-68-5, Dmso, uses 80-73-9, 1,3-Dimethyl-2-imidazolidinone 143-24-8, Tetraethylene glycol dimethyl ether
(plasticizer; fabrication of lithium secondary battery comprising hybrid polymer electrolyte prepared by spray method)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L81 ANSWER 26 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:868870 HCAPLUS Full-text
DOCUMENT NUMBER: 136:9098
TITLE: A lithium secondary battery comprising a porous polymer separator film fabricated by a spray method
INVENTOR(S): Yun, Kyung Suk; Cho, Byung Won; Cho, Won Il; Kim, Hyung Sun; Kim, Un Seok
PATENT ASSIGNEE(S): Korea Institute of Science and Technology, S. Korea
SOURCE: PCT Int. Appl., 36 pp.

CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001091219	A1	20011129	WO 2000-KR512 <--	20000522

W: JP, KR, US

PRIORITY APPLN. INFO.: WO 2000-KR512 <-- 20000522

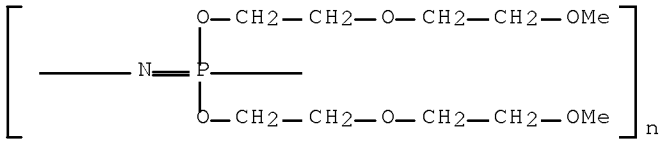
ED Entered STN: 30 Nov 2001

AB The present invention provides a lithium secondary battery and its fabrication method. More particularly, the present invention provides a lithium secondary battery comprising a porous polymer separator film and its fabrication method, wherein the porous polymer separator film is fabricated by the following process : (a) melting at least one polymer or dissolving at least one polymer with an organic solvent to obtain at least one polymeric melt or at least one polymeric solution; (b) adding the obtained polymeric melt or polymeric solution to barrels of a spray machine; and (c) spraying the polymeric melt or polymeric solution onto a substrate using a nozzle to form a porous separator film. The lithium secondary battery of the present invention has advantages of better adhesion with electrodes, good mech. strength, better performance at low and high temps., and better compatibility with an organic electrolyte solution of a lithium secondary battery .

IT 98973-15-0, Poly[bis(2-(2-methoxyethoxyethoxy))phosphazene]
(lithium secondary battery comprising porous polymer separator film fabricated by spray method)

RN 98973-15-0 HCAPLUS

CN Poly[nitrilo[bis[2-(2-methoxyethoxy)ethoxy]phosphoranylidyne]] (CA INDEX NAME)



IC ICM H01M010-38

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

ST lithium secondary battery porous polymer separator

IT Inductance
(electrostatic induction; lithium secondary battery comprising porous polymer separator film fabricated by spray method)

IT Fluoropolymers, uses
(filling agent; lithium secondary battery comprising porous polymer separator film fabricated by spray method)

IT Secondary battery separators
(lithium secondary battery comprising porous polymer separator film fabricated by spray method)

IT Alcohols, uses

Fluoropolymers, uses
Polyoxyalkylenes, uses
(lithium secondary battery comprising porous polymer separator film fabricated by spray method)

IT Secondary batteries
(lithium; lithium secondary battery comprising porous polymer separator film fabricated by spray method)

IT Coating process
(spray; lithium secondary battery comprising porous polymer separator film fabricated by spray method)

IT 554-13-2, Lithium carbonate 1304-28-5, Baria, uses 1309-48-4, Magnesia, uses 1310-65-2, Lithium hydroxide 1313-59-3, Sodium oxide na2o, uses 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 7789-24-4, Lithium fluoride, uses 9002-84-0, Ptfe 12003-67-7, Aluminum lithium oxide allio2 12047-27-7, Barium titanium oxide batio3, uses 12057-24-8, Lithia, uses 13463-67-7, Titania, uses 26134-62-3, Lithium nitride
(filling agent; lithium secondary battery comprising porous polymer separator film fabricated by spray method)

IT 67-64-1, Acetone, uses 67-68-5, Dmso, uses 68-12-2, Dmf, uses 79-20-9, Methyl acetate 80-73-9, 1,3-Dimethyl-2-imidazolidinone 96-48-0, Butyrolactone 96-49-1, Ethylene carbonate 105-37-3, Ethyl propionate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 109-99-9, Thf, uses 110-71-4, 1,2-Dimethoxyethane 127-19-5, n,n-Dimethylacetamide 141-78-6, Ethyl acetate, uses 143-24-8, Tetraethylene glycol dimethyl ether 554-12-1, Methyl propionate 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 872-50-4, n-Methyl-2-pyrrolidone, uses 4437-85-8, Butylene carbonate 7782-42-5, Graphite, uses 7791-03-9, Lithium perchlorate 9002-86-2, Pvc 9002-88-4, Polyethylene 9003-07-0, Polypropylene 9003-20-7, Polyvinyl acetate 9004-34-6, Cellulose, uses 9004-35-7, Cellulose acetate 9004-36-8 9004-39-1, Cellulose acetate propionate 9010-76-8, Acrylonitrile-vinylidene chloride copolymer 9010-88-2, Ethyl acrylate-methyl methacrylate copolymer 9011-14-7, Pmma 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer 12190-79-3, Cobalt lithium oxide colio2 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate 24937-79-9, Pvdf 24968-79-4, Acrylonitrile-methylacrylate copolymer 24980-34-5, Polyethylene sulfide 25014-41-9, Polyacrylonitrile 25086-89-9, Vinyl acetate-vinylpyrrolidone copolymer 25322-68-3, Peo 25322-69-4, Polypropylene oxide 25667-11-2, Polyethylene succinate 26101-52-0 26913-06-4, Poly[imino(1,2-ethanediyl)] 28726-47-8, Poly(Oxymethyleneoxyethylene) 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 98973-15-0, Poly[bis(2-(2-methoxyethoxyethoxy))phosphazene]
(lithium secondary battery comprising porous polymer separator film fabricated by spray method)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L81 ANSWER 27 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:851557 HCAPLUS Full-text
DOCUMENT NUMBER: 135:374196
TITLE: Fabrication of a lithium secondary battery comprising a superfine fibrous polymer electrolyte
INVENTOR(S): Yun, Kyung Suk; Cho, Byung Won; Jo, Seong Mu; Lee, Wha Seop; Cho, Won Il; Park, Kun You; Kim, Hyung Sun; Kim, Un Seok; Ko, Seok Ku; Chun, Suk Won; Choi, Sung Won

PATENT ASSIGNEE(S): Korea Institute of Science and Technology, S. Korea
SOURCE: PCT Int. Appl., 33 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001089023	A1	20011122	WO 2000-KR501 <--	20000519

W: JP, KR, US
PRIORITY APPLN. INFO.: WO 2000-KR501 <-- 20000519

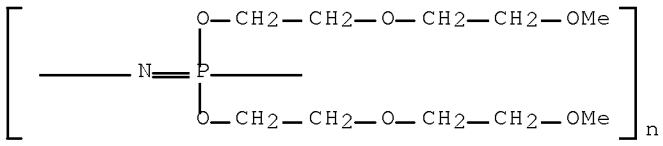
ED Entered STN: 23 Nov 2001

AB The present invention provides a lithium secondary battery and its fabrication method. More particularly, the present invention provides a lithium secondary battery comprising super fine fibrous porous polymer electrolyte and its preparation method, wherein the polymer electrolyte is fabricated by the following process: (a) dissolving at least one polymer with plasticizers and y organic electrolyte solvents to obtain at least one polymeric electrolyte solution; (b) adding the obtained polymeric electrolyte solution to a barrel of an electrospinning machine; and, (c) electropinning the polymeric electrolyte solution onto a substrate using a nozzle to form a polymer electrolyte film. The lithium secondary battery of the present invention has advantages of better adhesion with electrodes, good mech. strength, better performance at low and high temps., and better compatibility with organic electrolytes of a lithium secondary battery.

IT 98973-15-0, Poly[bis(2-(2-methoxyethoxyethoxy)phosphazene]
(fabrication of lithium secondary battery comprising superfine fibrous polymer electrolyte)

RN 98973-15-0 HCAPLUS

CN Poly[nitrilo[bis[2-(2-methoxyethoxy)ethoxy]phosphoranylidyne]] (CA INDEX NAME)



IC ICM H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST lithium secondary battery superfine fibrous polymer electrolyte

IT Battery electrolytes
Plasticizers
Polymer electrolytes
(fabrication of lithium secondary battery comprising superfine fibrous polymer electrolyte)

IT Fluoropolymers, uses
Polyoxyalkylenes, uses

(fabrication of lithium secondary battery comprising superfine fibrous polymer electrolyte)

IT Fluoropolymers, uses
(filling agent; fabrication of lithium secondary battery comprising superfine fibrous polymer electrolyte)

IT Secondary batteries
(lithium; fabrication of lithium secondary battery comprising superfine fibrous polymer electrolyte)

IT Alcohols, uses
(plasticizer; fabrication of lithium secondary battery comprising superfine fibrous polymer electrolyte)

IT Fibers
(spinning, electrospinning; fabrication of lithium secondary battery comprising superfine fibrous polymer electrolyte)

IT 79-20-9, Methyl acetate 105-37-3, Ethyl propionate 109-99-9, Thf, uses 141-78-6, Ethyl acetate, uses 554-12-1, Methyl propionate 7791-03-9, Lithium perchlorate 9002-86-2, Pvc 9002-88-4, Polyethylene 9003-07-0, Polypropylene 9003-20-7, Polyvinyl acetate 9004-34-6, Cellulose, uses 9004-35-7, Cellulose acetate 9004-36-8 9004-39-1, Cellulose acetate propionate 9010-76-8, Acrylonitrile-vinylidene chloride copolymer 9010-88-2, Ethyl acrylate-methyl methacrylate copolymer 9011-14-7, Pmma 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer 12190-79-3, Cobalt lithium oxide colio2 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate 24936-67-2, Polyethylenesulfide 24937-79-9, Pvdf 24968-79-4, Acrylonitrile-methylacrylate copolymer 25014-41-9, Polyacrylonitrile 25086-89-9, Vinyl acetate-vinylpyrrolidone copolymer 25266-14-2, Oxyethylene-oxymethylene copolymer 25322-68-3, Peo 25322-69-4, Polypropylene oxide 25569-53-3, Polyethylenesuccinate 26913-06-4, Poly[imino(1,2-ethanediyl)] 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 98073-15-0, Poly[bis(2-(2-methoxyethoxyethoxy)phosphazene]
(fabrication of lithium secondary battery comprising superfine fibrous polymer electrolyte)

IT 7631-86-9, Silica, uses 26101-52-0
(fabrication of lithium secondary battery comprising superfine fibrous polymer electrolyte)

IT 13463-67-7, Titania, uses
(filling agent; fabrication of lithium secondary battery comprising superfine fibrous polymer electrolyte)

IT 554-13-2, Lithium carbonate 1304-28-5, Barium oxide bao, uses 1309-48-4, Magnesia, uses 1310-65-2, Lithium hydroxide 1313-59-3, Sodium oxide, uses 1344-28-1, Alumina, uses 7789-24-4, Lithium fluoride, uses 9002-84-0, Ptfe 12003-67-7, Aluminum lithium oxide allio2 12047-27-7, Barium titanium oxide batio3, uses 12057-24-8, Lithia, uses 26134-62-3, Lithium nitride
(filling agent; fabrication of lithium secondary battery comprising superfine fibrous polymer electrolyte)

IT 67-64-1, Acetone, uses 67-68-5, Dmso, uses 68-12-2, Dmf, uses 80-73-9, 1,3-Dimethyl-2-imidazolidinone 96-48-0, Butyrolactone 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 110-71-4, 1,2-Dimethoxyethane 127-19-5, n,n-Dimethyl acetamide 143-24-8, Tetraethylene glycol dimethyl ether 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 872-50-4, N-Methyl-2-pyrrolidone, uses 4437-85-8, Butylene carbonate
(plasticizer; fabrication of lithium secondary battery comprising superfine fibrous polymer electrolyte)

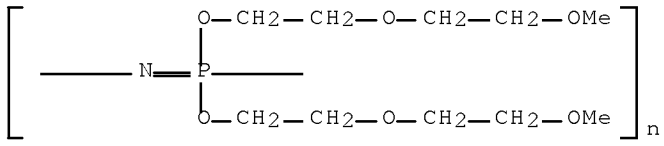
REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE

RE FORMAT

L81 ANSWER 28 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:851556 HCAPLUS Full-text
DOCUMENT NUMBER: 135:374195
TITLE: Fabrication of a lithium secondary battery comprising a superfine fibrous polymer separator film
INVENTOR(S): Yun, Kyung Suk; Cho, Byung Won; Jo, Seong Mu; Lee, Wha Seop; Cho, Won Il; Park, Kun You; Kim, Hyung Sun; Kim, Un Seok; Ko, Seok Ku; Chun, Suk Won; Choi, Sung Won
PATENT ASSIGNEE(S): Korea Institute of Science and Technology, S. Korea
SOURCE: PCT Int. Appl., 34 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001089022	A1	20011122	WO 2000-KR500 <--	20000519
W: JP, KR, US				
JP 2003533862	T	20031111	JP 2001-585344 <--	20000519
US 7279251	B1	20071009	US 2003-276880 <--	20030711
PRIORITY APPLN. INFO.:			WO 2000-KR500 W <--	20000519

ED Entered STN: 23 Nov 2001
AB The present invention provides a lithium secondary battery and its fabrication method. More particularly, the present invention provides a lithium secondary battery comprising a super fine fibrous porous polymer separator film and its fabrication method, wherein the porous polymer separator film is fabricated by the following process: (a) melting at least one polymer or dissolving at least one polymer with organic solvents to obtain at least one polymeric melt or at least one polymeric solution; (b) adding the obtained polymeric melt or polymeric solution to barrels of an electrospinning machine; and (c) discharging the polymeric melt or polymeric solution onto a substrate using a nozzle to form a porous separator film. The lithium secondary battery of the present invention has the advantages of better adhesion with electrodes, good mech. strength, better performance at low and high temps., and better compatibility with organic electrolyte solution of a lithium secondary battery.
IT 98973-15-0
(fabrication of lithium secondary battery comprising superfine fibrous polymer separator film)
RN 98973-15-0 HCAPLUS
CN Poly[nitrilo[bis[2-(2-methoxyethoxy)ethoxy]phosphoranylidyne]] (CA INDEX NAME)



IC ICM H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST lithium secondary battery superfine fibrous polymer separator
IT Secondary battery separators
(fabrication of lithium secondary battery comprising superfine fibrous polymer separator film)
IT Alcohols, uses
Polyoxyalkylenes, uses
(fabrication of lithium secondary battery comprising superfine fibrous polymer separator film)
IT Fluoropolymers, uses
(fabrication of lithium secondary battery comprising superfine fibrous polymer separator film)
IT Secondary batteries
(lithium; fabrication of lithium secondary battery comprising superfine fibrous polymer separator film)
IT Fibers
(spinning, electro-; fabrication of lithium secondary battery comprising superfine fibrous polymer separator film)
IT 67-64-1, Acetone, uses 67-68-5, Dmso, uses 68-12-2, Dmf, uses 79-20-9, Methyl acetate 80-73-9, 1,3-Dimethyl-2-imidazolidinone 96-48-0, Butyrolactone 96-49-1, Ethylene carbonate 105-37-3, Ethyl propionate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 109-99-9, Thf, uses 110-71-4, 1,2-Dimethoxyethane 127-19-5, Dimethyl acetamide 141-78-6, Ethyl acetate, uses 143-24-8, Tetraethyleneglycol dimethyl ether 554-12-1, Methyl propionate 616-38-6, Dimethyl carbonate 623-53-0, Ethylmethyl carbonate 872-50-4, n-Methyl-2-pyrrolidone, uses 4437-85-8, Butylene carbonate 7782-42-5, Graphite, uses 7791-03-9, Lithium perchlorate 9002-86-2, Pvc 9002-88-4, Polyethylene 9003-07-0, Polypropylene 9003-20-7, Polyvinyl acetate 9004-34-6, Cellulose, uses 9004-35-7, Cellulose acetate 9004-36-8 9004-39-1, Cellulose acetate propionate 9010-76-8, Acrylonitrile-vinylidene chloride copolymer 9010-88-2, Ethyl acrylate-methyl methacrylate copolymer 9011-14-7, Pmma 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer 12190-79-3, Cobalt lithium oxide colio2 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate 24936-67-2, Polyethylenesulfide 24937-79-9, Pvdf 25014-41-9, Polyacrylonitrile 25086-89-9, Vinyl acetate-vinyl pyrrolidone copolymer 25266-14-2 25322-68-3, Peo 25322-69-4, Polypropylene oxide 25569-53-3, Polyethylenesuccinate 25749-57-9, Acrylonitrile-methacrylic acid copolymer 26101-52-0 26913-06-4, Poly[imino(1,2-ethanediyl)] 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 98973-15-0
(fabrication of lithium secondary battery comprising superfine fibrous polymer separator film)
IT 554-13-2, Lithium carbonate 1344-28-1, Alumina, uses 9002-84-0,

Ptfe
(fabrication of lithium secondary battery comprising superfine fibrous polymer separator film)

IT 1304-28-5, Barium monoxide, uses 1309-48-4, Magnesia, uses 1310-65-2, Lithium hydroxide 1313-59-3, Sodium oxide na2o, uses 7631-86-9, Silica, uses 7789-24-4, Lithium fluoride, uses 12003-67-7, Aluminum lithium oxide allio2 12047-27-7, Barium titanium oxide batio3, uses 12057-24-8, Lithia, uses 13463-67-7, Titania, uses 26134-62-3, Lithium nitride
(filling agent; fabrication of lithium secondary battery comprising superfine fibrous polymer separator film)

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L81 ANSWER 29 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:816324 HCAPLUS Full-text
DOCUMENT NUMBER: 135:365459
TITLE: Thin-film supercapacitors, manufacturing, and hybrid batteries using capacitors thereof
INVENTOR(S): Yoon, Young Soo; Cho, Won Il; Cho, Byung Won; Yoon, Kyung Suk; Chung, Hyung Jin; Im, Jae Hong; Chun, Eun Jung; Nam, Sang Chul
PATENT ASSIGNEE(S): Korea Institute of Science and Technology, S. Korea
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001313237	A	20011109	JP 2000-355363 <--	20001122
KR 2001097673	A	20011108	KR 2000-21951 <--	20000425
PRIORITY APPLN. INFO.:			KR 2000-21951 A <--	20000425

ED Entered STN: 09 Nov 2001
AB The title manufacturing of capacitors involves forming a lower capacitor electrode (thickness ≤4 μm) on a substrate, depositing a solid electrolyte thin film (thickness ≤5 μm) on the lower electrode, and forming an upper capacitor electrode (thickness ≤4 μm) on the electrolyte film. The solid electrolyte thin films may be made from LiPON, LiAlSiO4, Sb2O3, and/or In2O3. The upper and lower electrodes may be made from Ru oxide, Ir oxide, Ta oxide, and/or Mn oxide. A hybrid battery may be prepared by making use of the thin film electrochem. capacitors, e.g., supercapacitors.
IT 23369-45-1, Phosphoric nitride
(thin film solid electrolyte; thin-film super-capacitors, manufacturing, and hibrid batteries using capacitors thereof)
RN 23369-45-1 HCAPLUS
CN Phosphoric nitride (9CI) (CA INDEX NAME)

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IC H01G009-22; H01G009-00; C23C014-06; C23C014-08; H01G009-025; H01G009-058; H01G009-016; H01G009-28; H01M002-10
CC 76-10 (Electric Phenomena)
Section cross-reference(s): 56, 57, 72
ST supercapacitor electrochem capacitor thin film solid electrolyte electrode
IT Capacitors
(electrochem./supercapacitors; thin-film super-capacitors, manufacturing, and hibrid batteries using capacitors thereof)
IT Capacitor electrodes
(thin film oxides; thin-film super-capacitors, manufacturing, and hibrid batteries using capacitors thereof)
IT Solid electrolytes
(thin films; thin-film super-capacitors, manufacturing, and hibrid batteries using capacitors thereof)
IT 1309-48-4, Magnesium oxide (MgO), properties 1344-28-1, Alumina, properties
(buffer thin film; thin-film super-capacitors, manufacturing, and hibrid batteries using capacitors thereof)
IT 7429-90-5, Aluminum, properties 7440-06-4, Platinum, properties 7440-22-4, Silver, properties 7440-25-7, Tantalum, properties 7440-57-5, Gold, properties
(collector thin film; thin-film super-capacitors, manufacturing, and hibrid batteries using capacitors thereof)
IT 11113-84-1, Ruthenium oxide 11129-60-5, Manganese oxide 12645-46-4, Iridium oxide 59763-75-6, Tantalum oxide
(thin film capacitor electrodes; thin-film super-capacitors, manufacturing, and hibrid batteries using capacitors thereof)
IT 1309-64-4, Antimony oxide (Sb2O3), properties 1312-43-2, Indium oxide (In2O3) 7439-93-2, Lithium, properties 19497-94-0, Aluminum lithium silicate (AlLiSiO4) 23369-45-1, Phosphoric nitride
(thin film solid electrolyte; thin-film super-capacitors, manufacturing, and hibrid batteries using capacitors thereof)

L81 ANSWER 30 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:630840 HCAPLUS Full-text
DOCUMENT NUMBER: 135:183309
TITLE: Rechargeable battery structure with metal substrate
INVENTOR(S): Kwak, B. Leo; Clarke, Robert A.; David, Richard F.
PATENT ASSIGNEE(S): Teledyne Technologies Incorporated, USA
SOURCE: U.S., 22 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

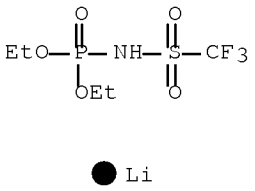
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6280875	B1	20010828	US 1999-275466	19990324

<--
PRIORITY APPLN. INFO.: US 1999-275466 19990324
<--
ED Entered STN: 30 Aug 2001
AB A thin-film rechargeable battery and its method of manufacture having a substrate over which may be formed layered battery components are disclosed. The layered components include, in series, a first electrode layer, and an electrolyte layer. The layered arrangement reduces reactivity between the layered components and provides improved battery performance.
IT 17739-47-8, Phosphorus nitride
(amorphous; rechargeable battery structure with metal substrate)
RN 17739-47-8 HCAPLUS
CN Phosphorous nitride (CA INDEX NAME)

IC ICM H01M006-12
ICS H01M006-46
INCL 429162000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST battery structure metal substrate
IT Battery cathodes
Secondary batteries
(rechargeable battery structure with metal substrate)
IT 17739-47-8, Phosphorus nitride
(amorphous; rechargeable battery structure with metal substrate)
IT 12057-17-9, lithium manganese oxide limn2o4 12190-79-3, cobalt lithium oxide colio2 355408-23-0, Lithium nitride phosphide
(rechargeable battery structure with metal substrate)
IT 1314-23-4, Zirconia, uses 7440-25-7, Tantalum, uses 7440-32-6, Titanium, uses 7440-67-7, Zirconium, uses
(rechargeable battery structure with metal substrate)
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L81 ANSWER 31 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:179534 HCAPLUS Full-text
DOCUMENT NUMBER: 134:342446
TITLE: New and novel lithium imide electrolytes and copolymers: Synthesis and characterization for lithium rechargeable batteries
AUTHOR(S): Venkatasetty, H. V.
CORPORATE SOURCE: H.V. Setty Enterprises, Inc., Burnsville, MN, USA
SOURCE: Annual Battery Conference on Applications and Advances, 16th, Long Beach, CA, United States, Jan. 9-12, 2001 (2001), 277-282.
Editor(s): Das, Radhe S. L.; Frank, Harvey.
Institute of Electrical and Electronics Engineers: New York, N. Y.
CODEN: 69BADB
DOCUMENT TYPE: Conference

LANGUAGE: English
ED Entered STN: 15 Mar 2001
AB Several new and novel Lithium imide salts were synthesized and characterized for their conductivities and electrochem. stabilities in nonaq. solvent mixts. Many copolymers and diblock copolymers using monomers such as polyethylene glycol methacrylate of different mol. wts. and/or poly(lauryl methacrylate) were synthesized and characterized. Solid polymer electrolytes with promising Li salts and copolymers were prepared with different Li/O ratios and varying ratios of copolymers and polyethylene oxide with inert additives. Their conductivities and electrochem. stabilities were measured. All Lithium imide salts and copolymer-based solid polymer electrolyte films are found to be stable from 0 to 4.5 V vs. Li. The solubilities and the conductivities of Li imide salts are found to depend on their structure. The phys. properties of copolymers are known to depend on the type and the mol. weight of the monomer used and the polymerization process. The solid polymer electrolyte films containing a large fraction of the copolymers in the mixture with polyethylene oxide and Li salts show much improved conductivity at room temperature Both the solid polymer electrolyte films and the Li imide salt solns. have been used in Li cells to evaluate their performance. The performance data of cells with these electrolytes are discussed in terms of their structures and compns.
IT 338746-30-8P
(synthesis and characterization of lithium imide electrolytes and copolymers for lithium rechargeable batteries)
RN 338746-30-8 HCAPLUS
CN Phosphoramidic acid, [(trifluoromethyl)sulfonyl]-, diethyl ester, lithium salt (9CI) (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST lithium battery lithium imide electrolyte copolymer
IT Secondary batteries
(lithium; synthesis and characterization of lithium imide electrolytes and copolymers for lithium rechargeable batteries)
IT Polyoxyalkylenes, uses
(polymers, complexes with lithium trifluoromethylsulfonyl perfluorobutylsulfonamide; synthesis and characterization of lithium imide electrolytes and copolymers for lithium rechargeable batteries)
IT Battery electrolytes
Electric conductivity
(synthesis and characterization of lithium imide electrolytes and copolymers for lithium rechargeable batteries)
IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 616-38-6, Dimethyl carbonate
(synthesis and characterization of lithium imide electrolytes and copolymers for lithium rechargeable batteries)

IT 25322-68-3DP, Polyethylene glycol, polymers, complexes with lithium trifluoromethylsulfonyl perfluorobutylsulfonamide 176719-70-3P 338746-27-3P 338746-28-4P 338746-29-5P 338746-30-8P
(synthesis and characterization of lithium imide electrolytes and copolymers for lithium rechargeable batteries)

IT 13463-67-7, Titania, uses
(synthesis and characterization of lithium imide electrolytes and copolymers for lithium rechargeable batteries)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L81 ANSWER 32 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:12793 HCAPLUS Full-text
DOCUMENT NUMBER: 134:74037
TITLE: Improved lithium ion polymer electrolytes and methods of manufacturing an electrochemical cell
INVENTOR(S): Munshi, M. Zafar A.
PATENT ASSIGNEE(S): Lithium Power Technologies, Inc., USA
SOURCE: PCT Int. Appl., 43 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001001507	A1	20010104	WO 2000-US16294 <--	20000626
W: AU, BR, CA, CN, ID, IL, IN, JP, KR, MX, SG, VN RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 6413676	B1	20020702	US 1999-340944 <--	19990628
JP 2003503822	T	20030128	JP 2001-506631 <--	20000626
US 20030091904	A1	20030515	US 2002-187483 <--	20020702
US 6828065	B2	20041207		
US 20040151985	A1	20040805	US 2002-188339 <--	20020702

PRIORITY APPLN. INFO.: US 1999-340944 A 19990628 <--
WO 2000-US16294 W 20000626 <--

ED Entered STN: 05 Jan 2001

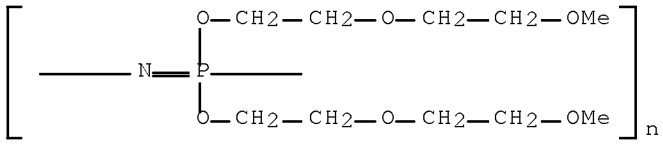
AB A dimensionally stable, highly resilient, hybrid copolymer solid-solution electrolyte-retention film for use in a lithium ion battery in one preferred embodiment has a predominantly amorphous structure and mech. strength despite contact with liquid solvent electrolyte. The film is a thinned (stretched), cast film of a homogeneous blend of two or more polymers, one of which is selected for its pronounced solvent retention properties. A very high surface area inorg. filler dispersed in the blend during formation thereof serves to increase the porosity of the film and thereby enhance electrolyte retention. The film is soaked in a solution of liquid polymer with liquid organic solvent electrolyte and lithium salt, for absorption thereof. Use of a crosslinked liquid polymer enhances trapping of mols. of the electrolyte into pores of the film. The electrolyte film is sandwiched between flexible active anode and cathode layers to form the lithium ion battery. Novel methods are provided

for forming the electrodes, the polymer substrate, and other elements of the battery.

IT 98973-15-0
(improved lithium ion polymer electrolytes and methods of manufacturing electrochem. cell)

RN 98973-15-0 HCAPLUS

CN Poly[nitrilo[bis[2-(2-methoxyethoxy)ethoxy]phosphoranylidyne]] (CA INDEX NAME)



IC ICM H01M006-18

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

ST battery lithium ion polymer electrolyte

IT Battery electrolytes
Electron beams
Polymer electrolytes
UV radiation
(improved lithium ion polymer electrolytes and methods of manufacturing electrochem. cell)

IT Secondary batteries
(lithium; improved lithium ion polymer electrolytes and methods of manufacturing electrochem. cell)

IT 1332-29-2, Tin oxide 7440-44-0D, Carbon, intercalation compds., uses 9002-84-0, Ptfe 9003-07-0, Polypropylene 9003-11-6, Ethylene oxide-propylene oxide copolymer 9011-14-7, Pmma 11126-15-1, Lithium vanadium oxide 12057-17-9, Lithium manganese oxide LiMn2O4 12423-04-0, Lithium vanadium oxide LiV3O8 24937-79-9, Pvdf 24968-11-4, Polyethylene naphthalate 25014-41-9, Polyacrylonitrile 25038-59-9, Polyethylene terephthalate, uses 25067-61-2, Polymethacrylonitrile 25230-87-9 25322-68-3, Peo 25322-68-3D, Peo, oxymethylene-linked 30871-57-9, Propylene-vinylidene fluoride copolymer 39300-70-4, Lithium nickel oxide 39457-42-6, Lithium manganese oxide 52627-24-4, Cobalt lithium oxide 61673-65-2, Lithium niobium selenide 74245-06-0, Lithium vanadium sulfide 98973-15-0 98973-15-0, Meep 131344-56-4, Cobalt lithium nickel oxide 162684-16-4, Lithium manganese nickel oxide 214536-41-1, Cobalt lithium manganese oxide
(improved lithium ion polymer electrolytes and methods of manufacturing electrochem. cell)

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L81 ANSWER 33 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2000:705210 HCAPLUS Full-text

DOCUMENT NUMBER: 133:269455

TITLE: Solid electrolyte battery

INVENTOR(S): Yasuda, Toshikazu; Noda, Kazuhiro; Horie, Takeshi

PATENT ASSIGNEE(S): Sony Corp., Japan

SOURCE: Eur. Pat. Appl., 15 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1041657	A2	20001004	EP 2000-106323 <--	20000323
EP 1041657	A3	20050720		
EP 1041657	B1	20070502		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2000285929	A	20001013	JP 1999-94149 <--	19990331
US 6576371	B1	20030610	US 2000-532794 <--	20000322

PRIORITY APPLN. INFO.: JP 1999-94149 A 19990331 <--

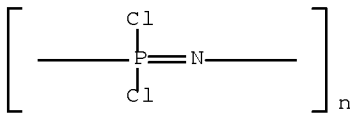
ED Entered STN: 06 Oct 2000

AB In a solid electrolyte battery incorporating a pos. electrode, a solid electrolyte layer formed on the pos. electrode, and a neg. electrode formed on the solid electrolyte layer, the solid electrolyte layer has a multi- layer structure having two or more layers, a solid electrolyte layer of the layers constituting the solid electrolyte layer having the multi-layer structure which is nearest the pos. electrode is constituted by a polymer having a glass transition point of -60° or lower when measurement is performed by using a differential scanning calorimeter and a number average mol. weight of 100,000 or larger, and at least one of the layers constituting the solid electrolyte layer having the multi-layer structure except for the layer nearest the pos. electrode is formed by crosslinking a polymer solid electrolyte having a functional group which can be crosslinked.

IT 26085-02-9D, Poly[nitrilo(dichlorophosphoranylidyne)], ethoxylated
(battery with solid electrolyte constituted by two or more layers)

RN 26085-02-9 HCAPLUS

CN Poly[nitrilo(dichlorophosphoranylidyne)] (CA INDEX NAME)



IC ICM H01M010-40
ICS C08G079-02

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

ST battery solid electrolyte

IT Battery electrolytes
Polymer electrolytes
Secondary batteries
(battery with solid electrolyte constituted by two or

more layers)
IT Fluoropolymers, uses
(binder; battery with solid electrolyte constituted by two or more layers)
IT 7439-93-2, Lithium, uses 12190-79-3, Cobalt lithium oxide colio2 14283-07-9, Lithium tetrafluoroborate 26085-02-9D, Poly[nitrilo(dichlorophosphoranylidyne)], ethoxylated 115383-11-4 115401-75-7
(battery with solid electrolyte constituted by two or more layers)
IT 7782-42-5, Graphite, uses
(battery with solid electrolyte constituted by two or more layers)
IT 24937-79-9, Pvdf
(binder; battery with solid electrolyte constituted by two or more layers)
IT 7429-90-5, Aluminum, uses 7440-50-8, Copper, uses
(current collector; battery with solid electrolyte constituted by two or more layers)

L81 ANSWER 34 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2000:442060 HCAPLUS Full-text
DOCUMENT NUMBER: 133:46207
TITLE: Microporous solid electrolytes for lithium secondary batteries
INVENTOR(S): Jang, Dong Hun; Kim, Sa Heum; Kim, Han Jun; Hong, Sung Min
PATENT ASSIGNEE(S): Finecell Co., Ltd., S. Korea
SOURCE: PCT Int. Appl., 46 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000038263	A1	20000629	WO 1999-KR798 <--	19991221
W: CN, JP, US RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 1171927	A1	20020116	EP 1999-960009 <--	19991221
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2002543554	T	20021217	JP 2000-590241 <--	19991221
PRIORITY APPLN. INFO.:			KR 1998-57031 A <--	19981222
			WO 1999-KR798 W <--	19991221

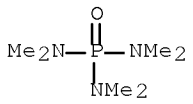
ED Entered STN: 30 Jun 2000
AB The present invention relates to a solid electrolyte having a good conductivity to lithium ion by allowing the liquid components and lithium salts to be absorbed into the electrolyte film containing an absorbent added at the time of its preparation and having a porosity, a process for preparing the same and a rechargeable lithium cell using the same as an electrolyte. As the absorbent, inorg. materials having not more than 40 μm of particle size can be used. As the polymer binder, any binder whose solubility against the

liquid electrolyte is small can be used. A wet process can introduce the porous structure of the electrolyte film. The solid electrolyte according to the present invention has the ionic conductivity of more than approx. 1 to 3 x 10-3 S/cm at room temperature and low reactivity to lithium metal. The cell is fabricated from the solid electrolyte together with electrodes by lamination or pressing methods and, the liquid electrolyte, which is decomposed by moisture, is introduced to a cell just before packaging. Therefore, the solid electrolyte according to the present invention is not affected by the humidity and temperature conditions during the manufacturing of the electrolyte film. In addition, the solid electrolyte according to the present invention has high thermal, mech. and electrochem. stability, and thus is suitable as an electrolyte for rechargeable lithium cells.

IT 680-31-9, Hexamethylphosphoramide, uses
(microporous solid electrolytes for lithium secondary batteries)

RN 680-31-9 HCAPLUS

CN Phosphoric triamide, N,N,N',N',N'',N''-hexamethyl- (CA INDEX NAME)



IC ICM H01M010-36

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

ST lithium battery microporous solid electrolyte

IT Cellulose pulp
Cork
(absorbent; microporous solid electrolytes for lithium secondary batteries)

IT Polyurethanes, uses
Zeolites (synthetic), uses
(absorbent; microporous solid electrolytes for lithium secondary batteries)

IT Synthetic rubber, uses
(acrylic-acrylonitrile-butadiene, binder; microporous solid electrolytes for lithium secondary batteries)

IT EPDM rubber
Fluoropolymers, uses
Polycarbonates, uses
Polyethers, uses
Polyimides, uses
Polymers, uses
Polyoxyalkylenes, uses
Polysulfones, uses
(binder; microporous solid electrolytes for lithium secondary batteries)

IT Wood
(flour, absorbent; microporous solid electrolytes for lithium secondary batteries)

IT Polyvinyl acetals
(formals, binder; microporous solid electrolytes for lithium secondary batteries)

IT Secondary batteries

(lithium; microporous solid electrolytes for lithium secondary batteries)

IT Molecular sieves
(mesoporous, absorbent; microporous solid electrolytes for lithium secondary batteries)

IT Absorbents
Battery electrolytes
(microporous solid electrolytes for lithium secondary batteries)

IT Clays, uses
Mica-group minerals, uses
Minerals, uses
(particles, absorbent; microporous solid electrolytes for lithium secondary batteries)

IT Binders
(polymers; microporous solid electrolytes for lithium secondary batteries)

IT 9002-88-4 9003-07-0, Polypropylene 9003-53-6, Polystyrene 9004-34-6, Cellulose, uses
(absorbent; microporous solid electrolytes for lithium secondary batteries)

IT 9002-86-2, Pvc 9002-89-5, Polyvinyl alcohol 9003-21-8, 2-Propenoic acid, methyl ester, homopolymer 9003-27-4, Polyisobutylene 9011-14-7, Pmma 9011-17-0, Vinylidene fluoride-hexafluoropropylene copolymer 9012-09-3, Cellulose triacetate 9016-00-6, Polydimethylsiloxane 17831-71-9, Tetraethyleneglycol diacrylate 24937-79-9, Pvdf 25014-41-9, Polyacrylonitrile 25322-68-3 26967-02-2, Poly(butylidene) 114481-92-4, Maleic anhydride-Vinylidene fluoride copolymer
(binder; microporous solid electrolytes for lithium secondary batteries)

IT 67-68-5, Dmso, uses 68-12-2, uses 96-47-9, 2-Methyltetrahydrofuran 96-48-0, γ-Butyrolactone 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 109-99-9, uses 111-96-6, Diglyme 112-49-2, Triglyme 126-33-0 143-24-8, Tetraglyme 505-22-6, 1,3-Dioxane 556-65-0, Lithium thiocyanate 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 7782-42-5, Graphite, uses 7791-03-9, Lithium perchlorate 12162-79-7, Lithium manganese oxide limno2 12190-79-3, Cobalt lithium oxide colio2 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 90076-65-6 132404-42-3
(microporous solid electrolytes for lithium secondary batteries)

IT 56-81-5, 1,2,3-Propanetriol, uses 60-29-7, Ether, uses 64-17-5, Ethanol, uses 67-64-1, Acetone, uses 67-66-3, uses 71-36-3, Butanol, uses 75-05-8, Acetonitrile, uses 75-09-2, Dichloromethane, uses 107-21-1, 1,2-Ethanediol, uses 108-94-1, Cyclohexanone, uses 123-91-1, Dioxane, uses 127-19-5, Dimethyl acetamide 141-78-6, Acetic acid ethyl ester, uses 680-31-9 , Hexamethylphosphoramide, uses 872-50-4, uses 7732-18-5, Water, uses 25917-35-5, Hexanol 30899-19-5, Pentanol
(microporous solid electrolytes for lithium secondary batteries)

IT 1318-93-0, Montmorillonite, uses 12026-53-8, Paragonite
(particles, absorbent; microporous solid electrolytes for lithium secondary batteries)

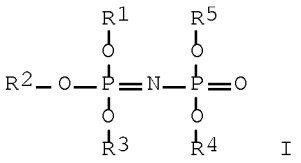
IT 1344-28-1, Alumina, uses 7631-86-9, Silica, uses
(porous, absorbent; microporous solid electrolytes for lithium

secondary batteries)
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L81 ANSWER 35 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2000:420557 HCAPLUS Full-text
DOCUMENT NUMBER: 133:32681
TITLE: Lithium ion batteries
INVENTOR(S): Ito, Tabane; Oikawa, Satoshi
PATENT ASSIGNEE(S): Sanyo Electric Co., Ltd., Japan; Mitsui Chemicals Inc.
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

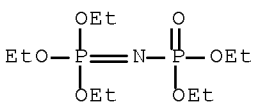
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000173619	A	20000623	JP 1999-31203 <--	19990209
PRIORITY APPLN. INFO.:			JP 1998-275312 A <--	19980929

OTHER SOURCE(S): MARPAT 133:32681
ED Entered STN: 23 Jun 2000
GI

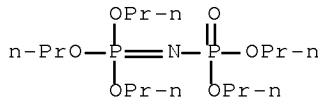


I

AB The batteries use Li intercalating carbonaceous anodes, where the carbonaceous material is coated with an organic phosphazene I, where R1-5 are alkyl groups with ≥1 of the R groups replaced by Li, at ≥0.441+10-6 mol/cm2 anode surface area.
IT 2397-48-0 7108-96-5
(lithiated; carbonaceous materials with lithiated organic phosphazene coatings for anodes in secondary lithium batteries
)
RN 2397-48-0 HCAPLUS
CN Phosphorimidic acid, (diethoxyphosphinyl)-, triethyl ester (9CI) (CA INDEX NAME)



RN 7108-96-5 HCAPLUS
CN Phosphorimidic acid, (dipropoxyphosphinyl)-, tripropyl ester (9CI) (CA INDEX NAME)



IC ICM H01M004-58
ICS H01M004-02; H01M004-04; H01M004-62; H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST secondary lithium battery carbonaceous anode phosphazene coating
IT Battery anodes
(carbonaceous materials with lithiated organic phosphazene coatings for anodes in secondary lithium batteries)
IT Carbonaceous materials (technological products)
(carbonaceous materials with lithiated organic phosphazene coatings for anodes in secondary lithium batteries)
IT 7782-42-5, Graphite, uses
(carbonaceous materials with lithiated organic phosphazene coatings for anodes in secondary lithium batteries)
IT 2397-48-0 7108-96-5
(lithiated; carbonaceous materials with lithiated organic phosphazene coatings for anodes in secondary lithium batteries)

L81 ANSWER 36 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2000:49109 HCAPLUS Full-text
DOCUMENT NUMBER: 132:110582
TITLE: Nonaqueous secondary batteries
INVENTOR(S): Tomiyama, Hideki
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 21 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000021449	A	20000121	JP 1998-186328 <--	19980701
JP 4003298	B2	20071107		
PRIORITY APPLN. INFO.:			JP 1998-186328 <--	19980701

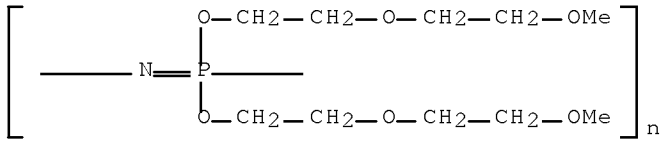
ED Entered STN: 21 Jan 2000

AB The batteries comprise a Li-containing transition metal oxide cathode, a Li-intercalating Si-containing anode, and a electrolyte gel containing (a) organic polymer, (b) non-protonic solvent, and (c) ammonium, alkali metal, or alkaline earth metal salt. The batteries have excellent charge-discharge cycle characteristics.

IT 98973-15-0 255897-46-2
(lithium secondary batteries with polymer gel electrolytes)

RN 98973-15-0 HCAPLUS

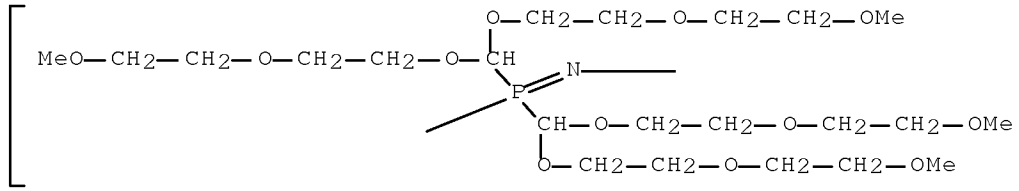
CN Poly[nitrilo[bis[2-(2-methoxyethoxy)ethoxy]phosphoranylidyne]] (CA INDEX NAME)



RN 255897-46-2 HCAPLUS

CN Poly[nitrilo[bis[bis[2-(2-methoxyethoxy)ethoxy]methyl]phosphoranylidyne]] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

IC ICM H01M010-40
ICS H01M010-40; H01M004-02; H01M004-58

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

ST nonaq secondary battery gel electrolyte;

oxyalkylene vinyl polymer gel electrolyte battery
IT Gels
(electrolyte; lithium secondary batteries with polymer gel electrolytes)
IT Battery electrolytes
Polymer electrolytes
Secondary batteries
(lithium secondary batteries with polymer gel electrolytes)
IT Fluoropolymers, uses
Polyoxyalkylenes, uses
(lithium secondary batteries with polymer gel electrolytes)
IT Polyphosphazenes
Polyphosphazenes
Polysiloxanes, uses
Polysiloxanes, uses
(polyoxyalkylene-, graft, lithium complex; lithium secondary batteries with polymer gel electrolytes)
IT Polyoxyalkylenes, uses
Polyoxyalkylenes, uses
(polyphosphazene-, graft, lithium complex; lithium secondary batteries with polymer gel electrolytes)
IT Polyoxyalkylenes, uses
Polyoxyalkylenes, uses
(polysiloxane-, graft, lithium complex; lithium secondary batteries with polymer gel electrolytes)
IT 7440-02-0, Nickel, uses
(-coated silicon anode; lithium secondary batteries with polymer gel electrolytes)
IT 7440-21-3, Silicon, uses 7631-86-9, Silica, uses 193072-79-6
(anode; lithium secondary batteries with polymer gel electrolytes)
IT 12190-79-3, Cobalt lithium oxide (CoLiO2)
(cathode; lithium secondary batteries with polymer gel electrolytes)
IT 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate
(electrolyte solvent; lithium secondary batteries with polymer gel electrolytes)
IT 21324-40-3, Lithium hexafluorophosphate
(electrolyte; lithium secondary batteries with polymer gel electrolytes)
IT 9003-11-6, Ethylene oxide-propylene oxide copolymer 9011-17-0
24937-79-9, Poly(vinylidene fluoride) 24968-79-4,
Acrylonitrile-methyl acrylate copolymer 25014-41-9,
Polyacrylonitrile 25067-61-2, Polymethacrylonitrile 25322-68-3
25322-69-4 29613-70-5 50867-60-2, Acrylonitrile-methyl vinyl ether copolymer 98973-15-0 115401-75-7 255897-37-1
255897-39-3 255897-40-6 255897-42-8 255897-44-0 255897-45-1
255897-46-2 255897-47-3 255897-48-4
(lithium secondary batteries with polymer gel electrolytes)

L81 ANSWER 37 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1999:70395 HCAPLUS Full-text
DOCUMENT NUMBER: 130:127424
TITLE: Polymer separator, its preparation, and separator-containing secondary battery
INVENTOR(S): Boudin, Francois; Olsen, Ib Ingemann; Andrieu, Xavier

PATENT ASSIGNEE(S): Alcatel Alsthom Compagnie Generale d'Electricite, Fr.
SOURCE: Eur. Pat. Appl., 15 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

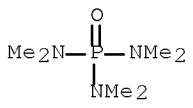
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 892454	A1	19990120	EP 1998-401752 <--	19980709
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
FR 2766295	A1	19990122	FR 1997-9072 <--	19970717
FR 2766295	B1	19990924		
US 6274276	B1	20010814	US 1997-977051 <--	19971125
JP 11102686	A	19990413	JP 1998-200527 <--	19980715
CA 2241950	A1	19990117	CA 1998-2241950 <--	19980716
US 6270928	B1	20010807	US 1999-357991 <--	19990721

PRIORITY APPLN. INFO.: FR 1997-9072 A 19970717 <--
US 1997-977051 A3 19971125 <--

ED Entered STN: 02 Feb 1999

AB A polymer separator is disclosed for batteries containing an organic electrolyte. The separator consists of (1) an elastomeric polymer 40-100, (2) optionally a polymer which swells in an organic electrolyte and bonds with the elastomeric polymer ≤60, and (3) optionally an inorg. compound (e.g., SiO2) ≤20%. The separator has a microporous structure having a porosity of 30-95% and an average pore diameter 0.1-5 μm (preferably 1 μm). Preparation of the separator involves (1) preparation of a solution of the elastomeric polymer, swellable polymer, and inorg. compound, (2) deposition of the solution on a substrate to form a film, and (3) drying of the film to remove the solvent.

IT 680-31-9, Hexamethylphosphoramide, uses
(solvent in separator preparation for secondary batteries)
RN 680-31-9 HCAPLUS
CN Phosphoric triamide, N,N,N',N',N'',N''-hexamethyl- (CA INDEX NAME)



IC ICM H01M010-40
ICS H01M002-16
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST polymer separator secondary battery

IT Polyvinyl acetals
(formals; separator for secondary batteries)
IT Secondary batteries
(polymer separator for)
IT Separators
(polymer separator for secondary batteries)
IT Fluoropolymers, uses
Polyethers, uses
Polyurethanes, uses
Rubber, uses
(separator for secondary batteries)
IT 7440-44-0, Carbon, uses 12031-65-1, Lithium nickel oxide (LiNiO2)
(anode in polymer separator-containing secondary battery)
IT 7782-42-5, Graphite, uses
(cathode in polymer separator-containing secondary battery)
IT 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate
616-38-6, Dimethyl carbonate 21324-40-3, Lithium phosphorus fluoride
(LiPF6)
(in electrolyte for secondary batteries)
IT 7631-86-9, Silica, uses
(in separator for secondary batteries)
IT 56-81-5, Glycerol, uses 64-17-5, Ethanol, uses 67-64-1, Acetone,
uses 75-05-8, Acetonitrile, uses 107-21-1, Ethylene glycol, uses
141-78-6, Ethyl acetate, uses 7732-18-5, Water, uses 30899-19-5,
Pentanol 35296-72-1, Butanol
(non-solvent in separator preparation for secondary batteries)
IT 9002-86-2, Polyvinyl chloride 9003-18-3, Acrylonitrile-butadiene
copolymer 9003-63-8, Polybutyl methacrylate 9011-14-7, Polymethyl
methacrylate 24937-79-9, Polyvinylidene fluoride 25014-41-9,
Polyacrylonitrile 105729-79-1, Isoprene-styrene block copolymer
106107-54-4, Butadiene-styrene block copolymer
(separator for secondary batteries)
IT 67-68-5, Dimethyl sulfoxide, uses 68-12-2, Dimethylformamide, uses
75-09-2, Dichloromethane, uses 78-40-0, Triethyl phosphate
108-94-1, Cyclohexanone, uses 127-19-5, Dimethylacetamide
680-31-9, Hexamethylphosphoramide, uses 872-50-4,
N-Methylpyrrolidone, uses
(solvent in separator preparation for secondary batteries)
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN THE
RE FORMAT

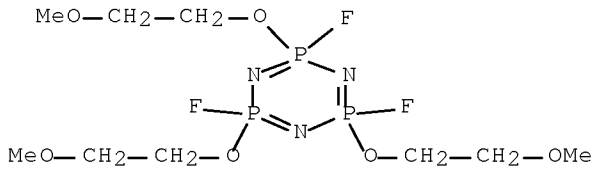
L81 ANSWER 38 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1997:783835 HCAPLUS Full-text
DOCUMENT NUMBER: 128:50771
ORIGINAL REFERENCE NO.: 128:9913a,9916a
TITLE: Nonflammable/self-extinguishing electrolytes for
batteries
INVENTOR(S): Narang, Subhash C.; Ventura, Susanna C.; Zhao,
Ming; Smedley, Stuart; Koolpe, Gary; Dougherty,
Brian J.
PATENT ASSIGNEE(S): SRI International, USA
SOURCE: PCT Int. Appl., 59 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

WO 9744842	A1	19971127	WO 1997-US9053 <--	19970522
W: CA, CN, JP, KR, MX, SG RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5830600	A	19981103	US 1996-653464 <--	19960524
CA 2255780	A1	19971127	CA 1997-2255780 <--	19970522
EP 906641	A1	19990407	EP 1997-926769 <--	19970522
EP 906641	B1	20040310		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
CN 1220029	A	19990616	CN 1997-194924 <--	19970522
JP 2001516492	T	20010925	JP 1997-542897 <--	19970522
AT 261614	T	20040315	AT 1997-926769 <--	19970522
KR 2000015946	A	20000315	KR 1998-709503 <--	19981124

PRIORITY APPLN. INFO.: US 1996-653464 A 19960524
<--
WO 1997-US9053 W 19970522
<--

OTHER SOURCE(S): MARPAT 128:50771
ED Entered STN: 15 Dec 1997
AB Fire-retardant electrolyte compns. comprise a Li salt dissolved in a fire-retardant solvent selected from the phosphates, phospholanes, cyclophosphazenes, silanes, fluorinated carbonates, and/or fluorinated polyethers. The electrolyte composition optionally contains a CO2-generating compound Also provided are fire-retardant batteries and fire-retardant conductive films formulated with such compns., as well as methods of manufacturing such films.
IT 200130-21-8P
(in nonflammable/self-extinguishing electrolytes for batteries)
RN 200130-21-8 HCAPLUS
CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexahydro-2,4,6-trifluoro-2,4,6-tris(2-methoxyethoxy)- (9CI) (CA INDEX NAME)



IC ICM H01M006-16
ICS H01M006-18; H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 29, 50

ST fire retardant battery electrolyte solvent; phosphate fire retardant battery electrolyte solvent; phospholane fire retardant battery electrolyte solvent; cyclophosphazene fire retardant battery electrolyte solvent; silane fire retardant battery electrolyte solvent; carbonate fluorinated fire retardant battery electrolyte; polyether fluorinated fire retardant battery electrolyte; safety lithium battery fire retardant solvent

IT Battery electrolytes
(fire-retardant solvents for lithium)

IT Safety
(fire-retardant solvents for lithium battery)

IT Cyclosiloxanes
(in manufacture of nonflammable/self-extinguishing electrolytes for batteries)

IT 181015-61-2P
(cyclic; in manufacture of nonflammable/self-extinguishing electrolytes for batteries)

IT 697-18-7
(in manufacture of nonflammable/self-extinguishing electrolytes for batteries)

IT 7664-41-7DP, Ammonia, reaction products with polymethyl siloxane, preparation 73606-13-0P 181015-57-6P 181015-63-4P
(in manufacture of nonflammable/self-extinguishing electrolytes for batteries)

IT 78-40-0, Triethylphosphate 98425-27-5 167951-80-6
(in nonflammable/self-extinguishing electrolytes for batteries)

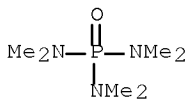
IT 823-31-4P 52168-19-1P 200130-21-8P 200130-23-0P 200130-26-3P
(in nonflammable/self-extinguishing electrolytes for batteries)

IT 107-46-0P, Hexamethyldisiloxane 1310-65-2DP, Lithium hydroxide, reaction products with polymethyl siloxane
(manufacture for nonflammable/self-extinguishing electrolytes for batteries)

L81 ANSWER 39 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1997:258061 HCAPLUS Full-text
DOCUMENT NUMBER: 126:319368
ORIGINAL REFERENCE NO.: 126:61919a,61922a
TITLE: Electrochemical behavior of aluminum in a water-hexametapol medium
AUTHOR(S): Nadezhina, L. S.; Lukmanova, Z. R.
CORPORATE SOURCE: St. Petersburg. Gos. Tekh. Univ., St. Petersburg, Russia
SOURCE: Zhurnal Prikladnoi Khimii (Sankt-Peterburg) (1996), 69(12), 1993-1996
CODEN: ZPKHAB; ISSN: 0044-4618
PUBLISHER: Nauka
DOCUMENT TYPE: Journal
LANGUAGE: Russian
ED Entered STN: 21 Apr 1997
AB Aluminum purity substantially affects the electrochem. behavior of an aluminum electrode in aqueous hexametapol containing 0.1 M KOH. Very good performance of an anodized aluminum electrode points to a crucial role of a surface oxide layer. Aluminum in an aqueous organic electrolyte is of interest as battery anode material.

IT 680-31-9, Hexametapol, uses
(electrochem. behavior of aluminum in a water-hexametapol medium)

RN 680-31-9 HCAPLUS
CN Phosphoric triamide, N,N,N',N',N'',N''-hexamethyl- (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 76
ST aluminum purity aq hexametapol elec potential; battery anode aluminum aq org electrolyte
IT Battery anodes
Electric potential
(electrochem. behavior of aluminum in a water-hexametapol medium)
IT 680-31-9, Hexametapol, uses 1310-58-3, Potassium hydroxide, uses 7429-90-5, Aluminum, uses
(electrochem. behavior of aluminum in a water-hexametapol medium)

L81 ANSWER 40 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1995:470158 HCAPLUS Full-text
DOCUMENT NUMBER: 122:218560
ORIGINAL REFERENCE NO.: 122:39859a,39862a
TITLE: High performance lithium or zinc secondary batteries with film-coated anodes
INVENTOR(S): Kawakami, Soichiro; Mishina, Shinya; Kobayashi, Naoya
PATENT ASSIGNEE(S): Canon K. K., Japan
SOURCE: Eur. Pat. Appl., 88 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 600718	A2	19940608	EP 1993-309571 <--	19931130
EP 600718	A3	19951115		
EP 600718	B1	20000426		
R: CH, DE, FR, GB, IT, LI				
JP 06168737	A	19940614	JP 1992-320557 <--	19921130
JP 2943127	B2	19990830		
JP 06168721	A	19940614	JP 1992-320558 <--	19921130
JP 3067426	B2	20000717		
JP 06168739	A	19940614	JP 1992-320559 <--	19921130
JP 2771406	B2	19980702		
JP 06168715	A	19940614	JP 1992-320560 <--	19921130
JP 3487556	B2	20040119		

JP 06196199	A	19940715	JP 1992-344563 <--		19921224
JP 3423338	B2	20030707			
JP 06283157	A	19941007	JP 1993-78342 <--		19930405
JP 3530544	B2	20040524			
CA 2110097	A1	19940531	CA 1993-2110097 <--		19931126
CA 2110097	C	20020709			
CA 2331602	A1	19940531	CA 1993-2331602 <--		19931126
CA 2331602	C	20020910			
AU 9352003	A	19940609	AU 1993-52003 <--		19931129
EP 809314	A2	19971126	EP 1997-200434 <--		19931130
EP 809314	A3	19981014			
EP 809314	B1	20080813			
R: CH, DE, FR, GB, IT, LI					
US 5824434	A	19981020	US 1993-159141 <--		19931130
US 6391492	B1	20020521	US 1995-482569 <--		19950607
AU 9726133	A	19970828	AU 1997-26133 <--		19970619
AU 715180	B2	20000120			
US 6207326	B1	20010327	US 1997-980055 <--		19971126
US 6395423	B1	20020528	US 1998-163545 <--		19980930
US 20020031701	A1	20020314	US 2001-879227 <--		20010613
US 7081320	B2	20060725			
US 20070180688	A1	20070809	US 2007-691912 <--		20070327
PRIORITY APPLN. INFO.:			JP 1992-320557 <--	A	19921130
			JP 1992-320558 <--	A	19921130
			JP 1992-320559 <--	A	19921130
			JP 1992-320560 <--	A	19921130
			JP 1992-344563 <--	A	19921224
			JP 1993-78342 <--	A	19930405
			JP 1992-245321 <--	A	19920914
			JP 1992-245322 <--	A	19920914
			JP 1992-245323 <--	A	19920914
			JP 1992-245324 <--	A	19920914
			JP 1992-245325 <--	A	19920914
			JP 1992-245326 <--	A	19920914
			JP 1993-13721	A	19930129

<--
CA 1993-2110097 A3 19931126
<--
EP 1993-309571 A3 19931130
<--
US 1993-159141 A3 19931130
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US 1995-482569 A3 19950607
<--
US 1997-979464 A3 19971126
<--
US 1998-163545 A3 19980930
<--

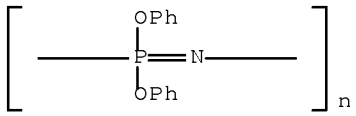
ED Entered STN: 07 Apr 1995

AB The secondary battery with long cycle life has a Li or Zn anode activating material, electrolytic solution, a separator, cathode activating material, a collecting electrode and a battery case, where the surface of the anode is covered with a film having a structure which allows ions relating to the battery reactions to pass through. Since growth of dendrite of Li or Zn at the time of the charge can be prevented, short circuit between the anode and cathode can be prevented. A Li battery , Ni-Zn battery, air-Zn battery, Br-Zn battery and AgO-Zn battery are described.

IT 28212-48-8, Polydiphenoxyphosphazene 28212-50-2, Polybis(trifluoroethoxy)phosphazene
(anode; high performance lithium or zinc secondary batteries with film-coated anodes)

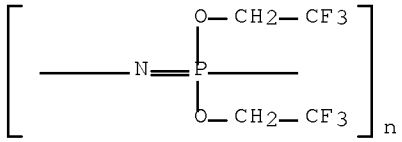
RN 28212-48-8 HCAPLUS

CN Poly[nitrilo(diphenoxyphosphoranylidyne)] (CA INDEX NAME)



RN 28212-50-2 HCAPLUS

CN Poly[nitrilo[bis(2,2,2-trifluoroethoxy)phosphoranylidyne]] (CA INDEX NAME)



IC ICM H01M010-40
ICS H01M010-24; H01M004-24; H01M004-02; H01M002-14; H01M004-36

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST secondary battery high performance; lithium secondary battery high performance; zinc secondary battery high performance; anode film high performance

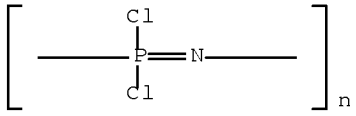
battery
IT Batteries, secondary
(Li, Ni-Zn, air-Zn, Br-Zn, AgO-Zn; high performance lithium or zinc secondary batteries with film-coated anodes)
IT Porphyrins
(cathode insulating film; high performance lithium or zinc secondary batteries with film-coated anodes)
IT Fluoropolymers
Siloxanes and Silicones, uses
(cathode; high performance lithium or zinc secondary batteries with film-coated anodes)
IT Carbon fibers, uses
(conductive layer; high performance lithium or zinc secondary batteries with film-coated anodes)
IT Carbides
Fluorides, uses
Halides
Nitrides
(electrodes; high performance lithium or zinc secondary batteries with film-coated anodes)
IT Aromatic hydrocarbons, uses
(insulating film, polymers; high performance lithium or zinc secondary batteries with film-coated anodes)
IT Cryptands
(insulating film; high performance lithium or zinc secondary batteries with film-coated anodes)
IT Glass, oxide
(insulating layer; high performance lithium or zinc secondary batteries with film-coated anodes)
IT Polyamines
Polyethers, uses
Sulfides, uses
(ring, insulating film; high performance lithium or zinc secondary batteries with film-coated anodes)
IT Thiols, uses
(crown ether, insulating film; high performance lithium or zinc secondary batteries with film-coated anodes)
IT Crown compounds
(cryptands, insulating film; high performance lithium or zinc secondary batteries with film-coated anodes)
IT Crown compounds
(ether imines, insulating film; high performance lithium or zinc secondary batteries with film-coated anodes)
IT Crown compounds
(ethers, thiol, insulating film; high performance lithium or zinc secondary batteries with film-coated anodes)
IT Crown compounds
(imines, insulating film; high performance lithium or zinc secondary batteries with film-

coated anodes)
IT Polyethers, uses
(thio-, ring, insulating film; high performance lithium or zinc secondary batteries with film-coated anodes)
IT Lithium alloy, base
Zinc alloy, base
(anode; high performance lithium or zinc secondary batteries with film-coated anodes)
IT 28406-56-6, Poly(2-vinylnaphthalene) 29659-51-6, Poly(9-Vinylanthracene)
(anode film; high performance lithium or zinc secondary batteries with film-coated anodes)
IT 1314-13-2, Zinc oxide, uses 7439-93-2, Lithium, uses 7440-66-6, Zinc, uses 25038-71-5, Ethylene-tetrafluoroethylene copolymer 25791-89-3 26702-40-9 27120-35-0 28212-48-8, Polydiphenoxyphosphazene 28212-50-2, Polybis(trifluoroethoxy)phosphazene 37626-13-4 94667-38-6 111093-02-8, Tirano coat 153315-80-1 162036-42-2 162036-43-3 162036-44-4 162036-45-5 162036-46-6 162036-49-9
(anode; high performance lithium or zinc secondary batteries with film-coated anodes)
IT 50-32-8D, Benzopyrene, polymers 85-01-8D, Phenanthrene, polymers 91-20-3D, Naphthalene, polymers 92-24-0D, Naphthacene, polymers 120-12-7D, Anthracene, polymers 129-00-0D, Pyrene, polymers 190-26-1D, Ovalene, polymers 191-07-1D, Coronene, polymers 213-46-7D, Picene, polymers 217-59-4D, Triphenylene, polymers 539-52-6D, Perillene, polymers 574-93-6, Phthalocyanine 1335-25-7, Lead oxide 12619-70-4, Cyclodextrin
(cathode insulating film; high performance lithium or zinc secondary batteries with film-coated anodes)
IT 1314-62-1, Vanadium oxide (V2O5), uses 7429-90-5, Aluminum, uses 7439-92-1, Lead, uses 7439-95-4, Magnesium, uses 7440-09-7, Potassium, uses 7440-23-5, Sodium, uses 7440-31-5, Tin, uses 7440-36-0, Antimony, uses 7440-38-2, Arsenic, uses 7440-39-3, Barium, uses 7440-42-8, Boron, uses 7440-69-9, Bismuth, uses 7440-70-2, Calcium, uses 7440-74-6, Indium, uses 7723-14-0, Phosphorus, uses 9002-88-4 9003-07-0, Polypropene 12054-48-7, Nickel hydroxide 12209-58-4, Molybdenum vanadium oxide 39300-70-4, Lithium nickel oxide 39457-42-6, Lithium manganese oxide 120479-28-9, Cobalt copper lithium oxide 131344-56-4, Cobalt Lithium nickel oxide 152654-50-7, Cobalt iron lithium oxide
(cathode; high performance lithium or zinc secondary batteries with film-coated anodes)
IT 7440-02-0, Nickel, uses 7440-06-4, Platinum, uses 7440-21-3, Silicon, uses 7440-32-6, Titanium, uses 7440-44-0, Carbon, uses
(conductive layer; high performance lithium or zinc secondary batteries with film-coated anodes)
IT 12673-92-6, Titanium sulfide 25498-03-7 162036-47-7 162036-48-8 162036-50-2
(high performance lithium or zinc secondary batteries with film-coated anodes)
IT 75-73-0, Carbon tetrafluoride 1333-74-0, Hydrogen, uses 7440-37-1, Argon, uses 7440-59-7, Helium, uses 7440-63-3, Xenon, uses 7647-01-0, Hydrochloric acid, uses 7664-39-3, Hydrofluoric acid, uses 7664-41-7, Ammonia, uses 7727-37-9, Nitrogen, uses 7782-41-4, Fluorine, uses 7782-44-7, Oxygen, uses 7782-50-5, Chlorine, uses 7783-54-2, Nitrogen trifluoride

(plasma anode treatment agent; high performance lithium or zinc secondary batteries with film-coated anodes)

IT 1305-78-8, Calcium oxide, uses 1309-48-4, Magnesium oxide (MgO), uses 1310-53-8, Germanium oxide, uses 1312-43-2, Indium oxide 1314-23-4, Zirconia, uses 1332-29-2, Tin oxide 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 11118-57-3, Chrome oxide 12640-89-0, Selenium oxide 13463-67-7, Titania, uses
(separator; high performance lithium or zinc secondary batteries with film-coated anodes)

L81 ANSWER 41 OF 41 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1991:175755 HCAPLUS Full-text
DOCUMENT NUMBER: 114:175755
ORIGINAL REFERENCE NO.: 114:29479a,29482a
TITLE: Solid polymer superionic conductors
AUTHOR(S): Alamgir, M.; Moulton, R. D.; Abraham, K. M.
CORPORATE SOURCE: EIC Lab., Inc., Norwood, MA, 02062, USA
SOURCE: Proceedings - Electrochemical Society (1991), 91-3(Proc. Symp. Primary Second. Lithium Batteries, 1990), 131-41
CODEN: PESODO; ISSN: 0161-6374
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 03 May 1991
AB Li+-conductive solid polymer electrolytes having room temperature conductivities of 2 + 10-3Ω-1 were synthesized by encapsulating certain mixed solvent organic electrolytes in a polymer network. These electrolytes of amorphous morphol. are prepared as free-standing, thin films. A representative electrolyte comprises a solution of LiClO4 in a mixture of ethylene carbonate and propylene carbonate immobilized within the support-matrix of polyacrylonitrile. Li/TiS2 cell utilizing these electrolytes show excellent discharge performance at room temperature, achieving 40% cathode utilization at the C/2 rate even in unoptimized laboratory cells.
IT 26085-02-9D, Poly[nitrilo(dichlorophosphoranylidyne)], reaction products with methoxyethoxyethanol sodium salt
(superionic conductor from)
RN 26085-02-9 HCAPLUS
CN Poly[nitrilo(dichlorophosphoranylidyne)] (CA INDEX NAME)



CC 76-2 (Electric Phenomena)
Section cross-reference(s): 38, 52
IT Batteries, secondary
(lithium, superionic polymer conductors for)
IT 143-24-8, Tetraglyme 9003-39-8, Poly(vinylpyrrolidone) 19278-10-5D, reaction products withpoly(dichlorophosphazine) 25322-68-3 25322-69-4 26085-02-9D, Poly[nitrilo(dichlorophosphoranylidyne)], reaction products with methoxyethoxyethanol sodium salt 57619-91-7 90076-65-6
(superionic conductor from)

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=> d his nofile

     (FILE 'HOME' ENTERED AT 09:47:48 ON 26 SEP 2008)

     FILE 'REGISTRY' ENTERED AT 09:48:51 ON 26 SEP 2008
L1        927748 SEA ABB=ON  PLU=ON  (P(L)N)/ELS
L2        823376 SEA ABB=ON  PLU=ON  L1 AND  (SI OR BI OR GE OR SN OR SB OR
                 O OR S OR SE OR TE OR PO)/ELS
L3        322869 SEA ABB=ON  PLU=ON  L1 AND 2-100/P
L4        249651 SEA ABB=ON  PLU=ON  L3 AND 2-100/N
L5        300963 SEA ABB=ON  PLU=ON  L1 AND X/ELS
L6           212 SEA ABB=ON  PLU=ON  L5 AND 3/ELC.SUB

     FILE 'HCAPLUS' ENTERED AT 09:56:44 ON 26 SEP 2008
L7             1 SEA ABB=ON  PLU=ON  US20060073381/PN
                 SEL RN

     FILE 'REGISTRY' ENTERED AT 09:58:40 ON 26 SEP 2008
L8            16 SEA ABB=ON  PLU=ON  (105-58-8/BI OR 1184-10-7/BI OR
                 12190-79-3/BI OR 1313-13-9/BI OR 14283-07-9/BI OR 2397-48-0
                 /BI OR 33027-68-8/BI OR 722454-84-4/BI OR 722454-86-6/BI
                 OR 724792-59-0/BI OR 724792-60-3/BI OR 7439-93-2/BI OR
                 9002-88-4/BI OR 957-13-1/BI OR 96-48-0/BI OR 96-49-1/BI)
L9             8 SEA ABB=ON  PLU=ON  L8 AND 1-100/P
L10            8 SEA ABB=ON  PLU=ON  L8 NOT L9
L11       555245 SEA ABB=ON  PLU=ON  L2 AND 1/P
L12       231885 SEA ABB=ON  PLU=ON  L11 AND 1/N

     FILE 'HCAPLUS' ENTERED AT 10:24:29 ON 26 SEP 2008
L13         4230 SEA ABB=ON  PLU=ON  L6
L14          362 SEA ABB=ON  PLU=ON  L9
L15       228597 SEA ABB=ON  PLU=ON  L12
L16       232750 SEA ABB=ON  PLU=ON  (L13 OR L14 OR L15)
L17            1 SEA ABB=ON  PLU=ON  L16 AND L7
L18         1836 SEA ABB=ON  PLU=ON  L16(L)FILM#
L19          216 SEA ABB=ON  PLU=ON  L18 AND ELECTROLYT?
L20            1 SEA ABB=ON  PLU=ON  L18 AND (NONAQUEOUS OR NON AQUEOUS)(2A)
                 BATTER?
L21         6515 SEA ABB=ON  PLU=ON  L16 AND FILM?
L22            4 SEA ABB=ON  PLU=ON  L21 AND (NONAQUEOUS OR NON AQUEOUS)(2A)
                 BATTER?
L23            4 SEA ABB=ON  PLU=ON  L20 OR L22
L24          114 SEA ABB=ON  PLU=ON  L16 AND (NONAQUEOUS OR NON AQUEOUS)(2A)
                 BATTER?
L25           10 SEA ABB=ON  PLU=ON  L24 AND SEPARAT?
L26              QUE ABB=ON  PLU=ON  FILM? OR THINFILM? OR LAYER? OR
                 OVERLAY? OR OVERLAID? OR LAMIN? OR LAMEL? OR (MULTILAYER?)
                 OR SHEET? OR LEAF? OR FOIL? OR COAT? OR TOPCOAT? OR
                 OVERCOAT? OR VENEER? OR SHEATH? OR COVER? OR ENVELOP? OR
                 ENCAS? OR ENWRAP? OR OVERSPREAD?
L27        31314 SEA ABB=ON  PLU=ON  L16 AND L26
L28           27 SEA ABB=ON  PLU=ON  L27 AND (NONAQUEOUS OR NON AQUEOUS)(2A)
                 BATTER?
L29           31 SEA ABB=ON  PLU=ON  L23 OR L25 OR L28

     FILE 'REGISTRY' ENTERED AT 10:37:47 ON 26 SEP 2008
L30       230617 SEA ABB=ON  PLU=ON  L12 NOT TIS/CI
L31       203045 SEA ABB=ON  PLU=ON  L30 NOT ?SALT?
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L32      201609 SEA ABB=ON  PLU=ON  L31 NOT AYS/CI
L33      164668 SEA ABB=ON  PLU=ON  L32 NOT 2/NC

     FILE 'HCAPLUS' ENTERED AT 10:39:23 ON 26 SEP 2008
L34      137729 SEA ABB=ON  PLU=ON  L33
L35       90868 SEA ABB=ON  PLU=ON  L15 NOT L34
L36      137729 SEA ABB=ON  PLU=ON  L34 NOT L35
L37           6 SEA ABB=ON  PLU=ON  L36 AND L29
L38           8 SEA ABB=ON  PLU=ON  L29 AND (L13 OR L14)
L39          11 SEA ABB=ON  PLU=ON  L37 OR L38
L40        4467 SEA ABB=ON  PLU=ON  (L13 OR L14)
L41         680 SEA ABB=ON  PLU=ON  L40 AND L26
L42           7 SEA ABB=ON  PLU=ON  L41 AND (NONAQUEOUS OR NON AQUEOUS)(3A)
                BATTER?
L43          11 SEA ABB=ON  PLU=ON  L39 OR L42

     FILE 'REGISTRY' ENTERED AT 11:32:09 ON 26 SEP 2008
L44         181 SEA ABB=ON  PLU=ON  L6 AND 1/NC
L45      152088 SEA ABB=ON  PLU=ON  L33 AND PHOSPH?
L46       12580 SEA ABB=ON  PLU=ON  L33 NOT L45
L47       27884 SEA ABB=ON  PLU=ON  L33 AND (?PHOSP?(3A)(NITRO? OR ?IMID?
                OR AMID? OR TRIAZ? OR  TERTAZ?))
L48       27884 SEA ABB=ON  PLU=ON  L33 AND (?PHOSP?(3A)(NITRO? OR IMID?
                OR AMID? OR TRIAZ? OR  TERTAZ?))
L49           8 SEA ABB=ON  PLU=ON  L1 AND L9
L50      130253 SEA ABB=ON  PLU=ON  L1 AND (?PHOSP?(3A)(NITRO? OR IMID? OR
                AMID? OR TRIAZ? OR  TERTAZ?))
L51      622857 SEA ABB=ON  PLU=ON  L2 AND 1/NC
L52      622091 SEA ABB=ON  PLU=ON  L51 NOT TIS/CI
L53      622091 SEA ABB=ON  PLU=ON  L52 NOT AYS/CI
L54             STR
L55             STR L54
L56          50 SEA SUB=L1 SSS SAM L55
L57      218024 SEA SUB=L1 SSS FUL L55
L58           8 SEA ABB=ON  PLU=ON  L57 AND L9
                SAV L57 CHU837/A
L59       78767 SEA ABB=ON  PLU=ON  L57 AND X/ELS
L60         206 SEA ABB=ON  PLU=ON  L59 AND  L6
L61      139257 SEA ABB=ON  PLU=ON  L57 NOT L59
L62      126965 SEA ABB=ON  PLU=ON  L61 AND 1/NC

     FILE 'HCAPLUS' ENTERED AT 11:50:10 ON 26 SEP 2008
L63       49843 SEA ABB=ON  PLU=ON  L59
L64       72739 SEA ABB=ON  PLU=ON  L62
L65        5757 SEA ABB=ON  PLU=ON  (L63 OR L64) AND L26
L66          12 SEA ABB=ON  PLU=ON  L65 AND  (NONAQUEOUS OR NON AQUEOUS)(2A
                )BATTER?
L67          74 SEA ABB=ON  PLU=ON  (L63 OR L64) AND  (NONAQUEOUS OR NON
                AQUEOUS)(2A)BATTER?
L68           3 SEA ABB=ON  PLU=ON  L67 AND SEPARAT?
L69        4075 SEA ABB=ON  PLU=ON  (L63 OR L64) AND SEPARAT?
L70          23 SEA ABB=ON  PLU=ON  L69 AND BATTER?
L71      105894 SEA ABB=ON  PLU=ON  (L63 OR L64) OR L14
L72        5757 SEA ABB=ON  PLU=ON  L71 AND (SEPERAT? OR L26)
L73         101 SEA ABB=ON  PLU=ON  L72 AND BATTER?
L74          76 SEA ABB=ON  PLU=ON  L73 AND (1808-2003)/PRY,AY,PY
L75          13 SEA ABB=ON  PLU=ON  L66 OR L68
L76          82 SEA ABB=ON  PLU=ON  L74 OR L75
L77          70 SEA ABB=ON  PLU=ON  L76 AND ELECTROCHEM?/SC,SX
L78           1 SEA ABB=ON  PLU=ON  L77 AND L7
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L79             9 SEA ABB=ON  PLU=ON  L29 AND L71
L80            70 SEA ABB=ON  PLU=ON  L77 OR L79
L81            41 SEA ABB=ON  PLU=ON  L80 AND DEV/RL
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